UNIVERSITY OF ALBERTA

MEDICINE, AGING AND SEXUALITY IN CHAUCER'S "REEVE'S PROLOGUE," "MERCHANT'S TALE" AND "MILLER'S TALE"

BY

©

CAROL ANN EVEREST

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY.

DEPARTMENT OF ENGLISH

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ISBN 0-315-73213-X

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TITLE OF THESIS: MEDICINE, AGING AND SEXUALITY IN CHAUCER'S "REEVE'S PROLOGUE," "MERCHANT'S TALE" AND "MILLER'S TALE"

DEGREE: DOCTOR OF PHILOSOPHY

YEAR THIS DEGREE GRANTED: 1992

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April 24, 1992

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled "MEDICINE, AGING AND SEXUALITY IN CHAUCER'S 'REEVE'S PROLOGUE,' 'MERCHANT'S TALE' AND 'MILLER'S TALE'" submitted by CAROL ANN EVEREST in partial fulfillment for the degree of DOCTOR OF PHILOSOPHY.

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TO LARRY

Myn hap, myn hele, and al my blesse

ABSTRACT

Discredited as the understanding of human physiology increased, the theories of sexuality, reproduction, aging and death current in the Middle Ages are often overlooked by literary scholars unless specific reference to a disease or medical procedure occurs in a text. Yet these scientific explanations pervade medieval writing because they shape the author's understanding of the human world. To provide access to a portion of the medical knowledge common to the thirteenth and fourteenth centuries, this thesis considers the development of medical theories from their origins in the writings of such authoritative Greek physicians and philosophers as Galen and Aristotle, through their Islamic interpreters, especially Avicenna, to the medical treatises of the Middle Ages.

Having explained the medical background, I then apply this knowledge to an analysis of portions of The Canterbury Tales. The first chapter deals with geriatric theories current in the Middle Ages and their usefulness in appreciating the metaphors of age in "The Reeve's Prologue." Chapter two considers "The Merchant's Tale" in the light of medieval theories of sexuality and reproduction. Specifically, it discusses the female contribution to procreation and May's manifestly unsatisfactory marriage to the aged January. Chapter three builds on this foundation by investigating male sexual physiology in relation to

January's blindness and Damian's obvious virility. The final chapter looks at "The Miller's Tale" from the point of view of theories linking flatulence to sexual ability, and in terms of theories of effeminacy current in Chaucer's time.

In addition to their contribution towards an understanding of late medieval thought, the medical concepts discussed in this dissertation illuminate the literature of the period. Chaucer's works provide an ideal beginning for such an investigation because of his prominent position in the literature of the age and because of the tradition of scientific explanations attached to his writings. I hope that my analysis serves to exemplify a technique which may be applied more broadly both to Chaucer's works and more generally to other Middle English writing.

ACKNOWLEDGEMENTS

I wish to thank my friend and colleague, Caroline Falkner of the Department of Classics, University of Alberta, for her enthusiastic and cheerful assistance with the translations in this dissertation. With consistent grace she assisted in clarifying many passages of medieval Latin which were, to borrow a phrase from Galen, "wonderfully and cunningly wrought."

A NOTE ON THE TRANSLATIONS

In all cases I have attempted to consult the medieval Latin translations of the medical works which I consult. This is not always possible because some have not been edited, and some were edited so long ago that editions are to be found only in Rare Book Collections. I have then consulted the most reliable source available.

For guidance in some of the medical writings, I am indebted to Margaret Tallmadge May's translation of Galen's *De usu partibus corporum* (*Galen: On the Usefulness of the Parts of the Body*) and to *The Works of Aristotle Translated into English*, edited by W. D. Ross. Although I am grateful to these references, all translations remain my own unless otherwise noted in the text, and all errors or omissions are entirely my responsibility.

TABLE OF CONTENTS

Page

INTRODUCTION..1

1. "GRAS TYME IS DOON": OLD AGE AND THE REEVE............24
    1. Grass and Hay..................................25
    2. The Mouldy Hair................................40
    3. The Mouldy Heart...............................48
    4. Rotten Before Ripe.............................50
    5. Medicine and Physiognomy.......................59

2. "PARADYS OR HELLE": PLEASURE IN "THE MERCHANT'S TALE"..................................69
    1. Pears and Pregnancy............................72
    2. The Importance of Pleasure.....................82
    3. Medicine and Metaphor.........................107

3. "AL THAT A MAN BILONGETH TO": JANUARY AND DAMIAN.....114
    1. Medicine and January's Blindness..............116
    2. Medicine and January's Precautions............143
    3. Damian's Physiology...........................160

4. "AS GREET AS IT HAD BEEN A THUNDER-DENT": THE END OF "THE MILLER'S TALE"....................167
    1. Sex and Flatulence............................168
    2. The Effeminate Man............................177
    3. The Misdirected Kiss..........................195

CONCLUSION...209

WORKS CITED..213

INTRODUCTION

Discredited as the understanding of human physiology increased, the theories of sexuality, reproduction, aging and death current in the Middle Ages are often overlooked by literary scholars unless specific reference to a disease or medical procedure occurs in a text. Yet scientific explanations of birth, growth, decay and death pervade medieval writing because they shape the author's understanding of the human world, just as popular knowledge of psychoanalytic theory, for example, underlies much modern literature. Although early medical teachings hold intrinsic interest for medievalists, they are often inaccessible to contemporary scholars, not to mention non-specialist readers. Detailed explanations of everyday phenomena frequently lie buried in massive collections of works, and even the simplest concepts often owe immense debts to a corpus of medical writing stretching back to classical Greece. In addition, some of the most pertinent commentary remains untranslated from the original Latin. To provide access to a portion of the knowledge common to the thirteenth and fourteenth centuries, this thesis considers the development of medical theories from their origins in the writings of such authoritative Greek physicians and philosophers as Galen and Aristotle, through their Islamic interpreters, especially Avicenna, to the medical treatises of the Middle Ages.

Most medical teachings accepted from the thirteenth century forward originate in the medical and philosophical writings of classical Greece, which delineate the complex relationship between internal and external factors in determining human health. A survey of the Greek originals becomes important, therefore, not only to a consideration of the concepts in their first expression but also to an understanding of the theories which form the basis of later commentaries. European physicians in the thirteenth, fourteenth and fifteenth centuries learned Aristotelian and Galenic principles through Latin translations of the Greek texts and through the major works of Islamic writers who had long been heirs to the Greek tradition. Some of the texts consulted were Latin translations of Arabic renditions of the Greek originals. Moreover, commentaries written by Arab physicians and philosophers shaped European understanding of many Greek tenets.

Included in the Eastern legacy were the writings of outstanding Jewish physicians practising in Western Islam. Because of their influence upon Christian medical practice, the works of the major Arab and Jewish practitioners constitute a significant part of any investigation which deals with late medieval medical thought. Finally, the works of Western scholars themselves must be considered in order to demonstrate that the theories begun in ancient Greece had passed virtually unchanged into late medieval Europe. Academic medicine embraced Aristotelian and Galenic explanations for the life processes, but these teachings were transmitted to the literate laity as well through the vast collections of knowledge encompassed in encyclopedias such as Vincent of Beauvais's Speculum naturale and Bartholomaeus Anglicus's De proprietatibus rerum. Repeated references to fundamental biological concepts in both the learned treatises and the more popular compendia testify to the widespread influence of Greek medical theories after the thirteenth century.

Important in their own right, medical explanations for the universal experiences of human life also provide insights into the literature of the period, expanding and deepening modern understanding and appreciation of late medieval writings. To demonstrate the benefits of a knowledge of medical theories current in Chaucer's time, I investigate some of the scientific tenets that inform "The Reeve's Prologue," "The Merchant's Tale" and "The Miller's Tale." An understanding of the medical foundations can reinforce standard readings, suggest new interpretations or intensify the humour already inherent in a tale. In addition, medical theories which emphasize established themes and imagery reveal an allusive level not usually evident to the modern reader.

That Chaucer possessed a comfortable familiarity with scientific thought was suggested by W. C. Curry in his influential Chaucer and the Medieval Sciences, first published in 1924. Since that time, scholars have continued to investigate Chaucer's scientific knowlege. In Chaucer and the Country of the Stars, for example, Chauncey Wood contends that Chaucer may have been skeptical about the effectiveness of astrological prognostications but that his poetry nevertheless demonstrates an impressive knowledge of theories pertaining to astral influences. Chaucer's Universe by J. D. North further traces Chaucer's use of astronomy, a branch of science extremely important to late medieval medicine. Nor have scholars ignored the specifically medical aspects of some of Chaucer's work. Paul Delany has provided valuable information on Chaucer's indebtedness to Constantinus Africanus's De coitu, while Emerson Brown Jr. has investigated some of the concepts of old age which underlie the action of the Merchant's Tale. Mark Infusino and Ynez O'Neill look at practical surgery in the Knight's Tale; David Williams bases his reading of the Miller's Tale on the predominance of cautery in the medical practice of the period, and Laurel Braswell relates medical concerns to astrological reckonings.

The poet's scientific interests are also represented in his own works, the Treatise on the Astrolabe providing step by step instructions for using the instrument. Written about the same time as the Treatise, The Equatorie of the Planetis bears Chaucer's name on one of its tables. Early in the 1950's, D. J. Price first atributed authorship of this scientific tract to Chaucer (159-64), a supposition which has received qualified acceptance since that time.

North argues not only that Chaucer composed The Equatorie but also that the existing manuscript is a holograph (157).[1]

The poetry similarly indicates an aquaintance with the major medical authorities of the period. In The Book of the Duchess, the Black Knight laments that no power in heaven or on earth can gladden his bereaved heart, nor can even the greatest doctors heal his sorrow: "Ne hele me may no phisicien / Noght Ypocras ne Galyen" (571-72). Likewise, the Host links the two pre-eminent medical personalities of the Middle Ages in his compliment to the Physician: "I pray to God so save thy gentil cors, / And eek thy urynals and thy jurdones / Thyn Ypocras, and eek thy galiones" (Intro. to PardT 194; VI.304-06). So great were their reputations that Hippocrates and Galen gave their names to medical infusions of almost magical qualities (Castiglioni 327). These two fathers of medicine were deeply respected and widely quoted by both Arab commentators of the early medieval period and by their later Western followers.

An investigation of medicine in relation to The Canterbury Tales, then, participates in an established tradition of research into scientific matters with which Chaucer was probably familiar. Useful as each of the studies mentioned previously has been to an increased understanding of Chaucer's artistry, no comprehensive treatment of the theories underlying the late medieval understanding of the life processes has been attempted. Although far from comprehensive, this dissertation aims to demonstrate the usefulness of such an approach by viewing some of the tales in the light of medical explanations current in Chaucer's time.

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[1] In her description of manuscripts in Cambridge libraries, Pamela Robinson agrees with North's findings, commenting that the radix date (31 December 1392) is assigned to Chaucer. She observes that Chaucer's own orthography seems to be best preserved in this manuscript (82-83).

To discover some of the fundamental medical hypotheses common to the late Middle Ages, I have focussed upon learned writings produced for the most part by Greek and Arabic authorities, available in Latin translations, and by physicians and philosophers attached to medieval universities. While these books may seem to represent only an elitist viewpoint, in practice the theories expounded in the academic writings were by no means confined to the university sphere. Linda Ehrsam Voigts suggests that the intended audience of even highly learned treatises encompassed a far wider variety of practitioners than one might immediately surmise. For example, a long technical and theoretical compendium of university medicine from the fifteenth century is addressed to a London barber. At the end of his prologue, the translator states that he "shal write sum del of theorike & sum del of pratike þorou þe whiche ȝe schulle þe betir entre into þe worchynge of fisyk in tyme of lakkyng of wise fysicians . . . nouȝt to clerkys, but to myn dere gossip thomas plawdon, citiseyn & barbour of london" (43). Such manuscripts circulated among those who were not university trained but were nevertheless involved in the healing professions, as Nancy Siraisi observes in Medieval and Early Renaissance Medicine. University or monastically educated readers encountered medical texts in Latin, while less formally instructed practitioners were exposed to the same material in the vernacular. Siraisi comments, "Practitioners who used vernacular medical books for study and reference learned to participate in essentially the same system of medical ideas as their Latinate colleagues, since most vernacular writings on medicine drew in one way or another on Latin texts" (52).

The literate laity also had access to the ideas of influential physicians, both ancient and contemporary, through the encyclopedias. Bartholomaeus Anglicus's De proprietatibus rerum, written in the mid-thirteenth century, was the most popular work of this kind in Europe and England for three centuries (Collison 58). A Franciscan professor of theology at the University of Paris, Bartholomeus dedicated the seventh book of his large collection to medical matters. Lacking the specificity of a medical textbook, this section of the encyclopedia was intended as a guide for Franciscan healers working with the general public, but it became a reference book for a wide variety of readers. Because of its accuracy of quotation, the De proprietatibus rerum comprises a "valuable and concise compilation of medical knowledge circulating during the twelfth and thirteenth centuries" (Rubin 197). In the late fourteenth century, John of Trevisa translated Bartholomeus's work into English, even though the original Latin work was widely known throughout England and Bartholomaeus's reputation firmly established (Trevisa 3: 10). The production of an English version reflects a growing desire for wide access to the Latin texts. In his survey of pre-medieval and medieval encyclopedias, Maurice de Gandillac comments: "son œuvre sera rapidement traduite dans les principales langues vulgaires et on lira encore au XVI^{e} siècle" (41). The translation, like the Latin source, provides academic medical theories, condensed and clarified.

The Dominican Vincent of Beauvais, student of Albertus Magnus and contemporary of Thomas Aquinas, Roger Bacon and Petrus Hispanus, completed his mammoth Speculum maius in 1244 (Castiglioni 349). "Undoubtedly the outstanding achievement of the Middle Ages" (Collison 60), this vast conspectus of knowledge consists of three books to which a fourth was added early in the fourteenth century by an unknown author. The first volume, the Speculum naturale, treats of man's creation, condition and relation to God. Included are several theoretical books on human physiology. The Speculum doctrinale, second in the series, deals with subjects pertaining to the arts, for example language, grammar and applied medicine. The Speculum historiale provides a world history to 1244. The final book, the Speculum morale, adds ethics, astrology and theology to the compendium. In his evaluation of medieval encyclopedias, Collison assesses the Speculum's influence:

> The _Speculum maius_ served as the world's only encyclopedia for many years afterwards, and even today it remains of inestimable importance as the only repository of excerpts from some works which no longer survive, as a mirror to the state of knowledge during the thirteenth century, and--what is equally important--as a record of the actual tastes and prejudices of those times. (62)

Michel Lemoine agrees, commenting: "Le _Speculum majus_ constitue une image fidèle et fouillée des connaissances théoriques et pratiques de l'époque; aucune particularité, aucun détail ne sont négligés" (85). In the _Speculum naturale_ Vincent compiles and condenses the opinions of accepted authorities, both ancient and contemporary, to provide an overview of medical explanations for the stages of human life.

Scholars trained in medieval universities and those enjoying access to the libraries of monasteries or of the nobility encountered the ancient authorities in their original works, which had been translated from the Greek or Arabic into Latin. Most revered of all antique philosophers, Aristotle figured importantly in all branches of medieval learning, including medicine. Siraisi explains the impact of Aristotelian thought:

> Between the early twelfth and the early thirteenth centuries, first the advanced logical and then the natural philosophical or scientific works of Aristotle became available in Latin; in the course of the thirteenth century, the spread of Aristotelian modes of arguing, Aristotelian ideas about the nature of scientific knowledge and Aristotelian physical science transformed European intellectual life. The impact on learned medicine was certainly very great as regards both methodology and content. (95)

Aristotle's books on human and animal physiology, the *De historia animalium*, the *De partis animalium* and the *De generatione animalium*, were known collectively as the *De animalibus*. Translated from Greek into Arabic in the early ninth century, this great work became the principal medieval text on biology because of its scope and length as well as its influence on subsequent writings. A translation from the Arabic into Latin attributed to Michel Scot appeared early in the thirteenth century. By the mid-thirteenth century, however, the study of Aristotelian doctrine comprised the basis of all degree courses at medieval universities throughout Europe and England, a situation which necessitated a better translation than the Arabic-Latin version. At the request of Thomas Aquinas, William of Moerbeke undertook the task, producing his Greek-Latin translation in 1260 (Wingate 85). Nevertheless, Scot's version was not entirely superseded by the later translation. It was used, for example, by both Bartholomaeus Anglicus and Vincent of Beauvais as the authority for their encyclopedias (Wingate 72-3).

In addition to the Aristotelian corpus, students at medieval universities studied commentaries on the Philosopher by both Christian and Islamic interpreters. Michel Scot translated Averroës's commentaries on the *De animalibus* into Latin, providing a model for Western interpreters such as Albertus Magnus. Although others had dealt with the material prior to his great treatise in twenty-six books, the Universal Doctor's De animalibus so organized and popularized Aristotelian doctrine that virtually all subsequent writers refer to his discussions. A preliminary study for Albertus's longer work, the Questiones super libris de animalibus consist of a series of lecture notes taken by Conrad of Austria while attending Albertus's classes in Cologne in 1258. Important not only in illustrating the evolution of Albertus's thought, these questions also contain some material not included in the finished treatise (Wingate 83).

During his lifetime, William of Moerbeke translated most of the available Aristotelian works into Latin. The Parva naturalia, containing the treatises De somno et vigilia, De divinatione per somnia, De longitudine et brevitate vitae (sometimes entitled De morte et vita), and De iuventute et senectute, was accessible to scholars by the late thirteenth century. William did not translate the Problemata, a pseudo-Aristotelian collection of questions and answers accepted as genuine in the Middle Ages. By the end of the thirteenth century, however, an important school of translators in Sicily had produced a Latin version of the Problemata along with the Physiognomia, another work falsely attributed to Aristotle. Both tracts achieved a rapid and widespread popularity in Europe and England (Wingate 94).

Next to Aristotle, Hippocrates occupied the place of honour in the late medieval medical curriculum. The earliest of Hippocrates's texts to be translated from Greek to Latin, the Aphorisms exist in manuscripts dating from the eighth century. Translated again by the prolific Constantinus Africanus in the eleventh century (Reisman 31), this text was the best known and most widely circulated of all Hippocratic writings. It was studied at universities not only by aspiring physicians but also by candidates for degrees in the faculty of arts (Kibre 65). Students met the Aphorisms in the original form as well as in imitations and commentaries provided by later writers. The most renowned of these is Moses Maimonides, a Jewish physician practicing in Western Islam, who wrote a two-volume reaction to the Hippocratic original. So popular was Hippocrates's treatise that it was still cited into the nineteenth century as "the physician's Bible" (Kibre 29). Hippocrates's investigation of human reproduction, the De natura puerorum, was translated into Latin in the early thirteenth century by Bartholomaeus of Messina. It was studied in universitites, but the more general reader gained access to its principles through the Speculum naturale of Vincent of Beauvais, which frequently quotes it as an authority (Kibre 189).

The third member of the Greek trinity which provided the foundation for European medicine, Claudius Galen of Pergamon (138-201 A.D.), dominates medical thought from his own time until the end of the sixteenth century (Siraisi 4). Although a complete Latin translation of his work did not appear until 1490, partial translations were available from the twelfth and thirteenth centuries forward.[2] Late in the twelfth century Burgundio of Pisa translated an Arabic abridgement of the first twelve books of Galen's *De usu partium corporis*, the theoretical summary of his physiological thought. In 1320 Pietro d'Abano translated a version from the original Greek, but his work was soon eclipsed by the careful and literal translation by Niccolò da Reggio in 1317.[3] Earlier translations focus on works dealing with aspects of diagnosis and treatment, but even in these more practical texts, Galen's concepts of human anatomy and physiology are evident.[4] Observing that certain basic physiological teachings endured from Greek antiquity into the nineteenth century, Siraisi notes the relative uniformity of medical thought in late medieval Europe and England:

> The predominance of Galen's ideas over those of other ancient medical authors further ensured broad areas of general agreement, especially after the twelfth century. . . . In the later Middle Ages, the multiplicity of texts of various chronological, geographical and linguistic origins, together with scholastic ingenuity in elaborating interpretation and occasional original contributions, guaranteed diversity; nevertheless, most of the variations were in detail only. (100)

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[2] "The first Latin translation of the complete works is that by Diomede Bonardo, a physician of Brescia, published in Venice in 1490 by Filippo Perizio de Caneto" (Castiglioni 220).

[3] Niccolò's translation is so precise that even today it can be used in illuminating corrupted passages of the Greek text. Some of the Latin text in Kühn's definitive edition of Galen's complete works (1822) derives from Niccolò's version (May 6).

[4] Siraisi reports that considerably more than forty treatises attributed to Galen had been translated by the end of the twelfth century (71).

A devoted disciple of Hippocrates, Galen provides the bedrock upon which all later writers built.

The learned practitioner was not forced to search for Galen's original words in order to understand his principles; they were easily available in the writings of Islamic physicians such as Avicenna (Abû Alî al-Hussein ibn Abdallâh ibn Sînâ, 980-1037) and Haly Abbas (Alî ibn al-Abbâs al Magûsî, d. 994). The most illustrious physician in early medieval Arabic medicine, Avicenna wrote the Q'anun or Canon, which became the single most important text in the history of Western medicine (Castiglioni 270). Considered a standard reference for over five hundred years, the Canon was studied in medical schools until the eighteenth century, and parts of it carried influence even into the nineteenth century (Reisman 52). Its first translation by Gerard of Cremona in the twelfth century became the source for the first printed edition which in turn spawned at least thirty later Latin reprintings (Gordon 170). The work of the "Prince of Physicians," as he was known to his Western admirers, consists of an "exposition of Galenism down to the smallest detail, worked out according to strict Aristotelian principles" (Talbot 31). Thoroughgoing Galenist that he was, Avicenna attempted to reconcile Aristotle's differences with his mentor. The Canon rarely provides original insights, furnishing instead a harmonious, logical compilation of Greco-Arabic medicine which became the indisputable authority for Western physicians until at least the seventeenth century.

Before Avicenna's great compendium obscured its popularity, the Perfect Book of the Art of Medicine by Haly Abbas constituted the most influential representative of Arabic medicine. Even when eclipsed by the Canon, it remained a significant authority. Translated first by Constantinus Africanus in the eleventh century, Haly Abbas's work was again rendered into Latin by Stephen of Antioch in the early decades of the twelfth century (Talbot 30). Quoting primarily Hippocrates, Galen and Aristotle, Haly Abbas wrote a comprehensive practical guidebook which contained little medical theory but which remained useful to the practicing physician.

The great Arab clinician known as Rhazes (Abû Bakr Muhammad ibn Zakariâ, 841-926) wrote more than two hundred books on medicine, philosophy, religion, mathematics and astronomy. His encyclopedia of therapeutics, the Liber Continens, was translated in the thirteenth century (Castiglioni 268), but its arrival was preceded by that of his second most comprehensive work, the Liber Medicinalis, which was transmitted to the West in the middle of the twelfth century by Gerard of Cremona (Talbot 28). Like Haly Abbas, Rhazes was concerned mainly with diagnosis and treatment, not with theoretical background, although his treatments are grounded solidly on Galenic principles.

At the end of the golden age of Arabic medicine in the tenth and eleventh centuries, the locus of medical thought shifted from the Eastern Caliphate to the Western, including the intellectual centres in Spain. One of the foremost writers to emerge from Western Islam was known to the Christian world as Averroës (Abû' l-Walîd Muhammad ibn Rushd', 1126-1198). Condemned by both Christian and Moslem religious hierarchies for his secular cynicism, his commentaries on Aristotle were nevertheless valued in the later Middle Ages (Reisman 61). Even into the Renaissance, Aristotle's works were regularly published with Averroës's remarks in the same volume.

A pupil of Averroës was the celebated Abu Imrâm Mûsâ ibn Maimûm, or Maimonides (1135-1204). Trained in Islamic Spain, this Jewish physician and philosopher moved easily between Christian and Muslim worlds. His important treatise on intercourse was the most famous of his writings in his own time (Castiglioni 277), but his Aphorisms were also translated into Latin before his death. Probably the most eminent physician of Western Islam was Isaac Judaeus (Ishâq ibn Sulaimân al-Isrâ'îlî, c. 880-932). His three medical tracts were translated by Constantinus in the eleventh century and were later collected into an Opera Omnia which enjoyed wide popularity in Europe (Castiglioni 273). Vincent of Beauvais frequently refers to Isaac in his medical discussions.

By the twelfth century, the medical school at Salerno had established itself as the foremost teaching institute of its kind in Europe. Its pre-eminence was due largely to its library of translations of important Greek and Arabic texts, furnished for the most part by Constantinus Africanus, a monk at nearby Monte Cassino. Constantinus translated most of the influential Greek and Islamic writers, including Galen, Haly Abbas and Isaac Judaeus. Gerard of Cremona's translations were also collected at Salerno so that it became the chief repository of medical learning in Western Europe. Although medical practitioners in England had access to some Salernian medicine as early as the tenth century, the major influx of learning can be attributed to the physicians attendant upon the Norman conquerors after 1066 (Talbot 46). Bringing with them both theory and practice gained at Salerno, these doctors provided medical texts to be copied in noble and monastic libraries. The famous Regimen Sanitatis Salernitatem is dedicated in some manuscripts to Robert of Normandy, eldest son of William the Conqueror. This aphoristic composition written in medieval Latin enjoyed extraordinary popularity in the Middle Ages, being translated eleven times into French, eight times into German, six times into Italian, five times into English and once each into Polish, Czechoslovakian, Flemish and Hebrew before the end of the Renaissance (Reisman 43). Over one hundred manuscripts of the Latin text survive, many of them containing the commentary of Arnaldus Villanova (1235-1315), considered by many to be the most famous physician of the Middle Ages.

As Salerno's reputation declined, medical schools attached to universities gained prominence. The University of Paris and Oxford University shared faculty and curricula during the thirteenth and fourteenth centuries, although distinguished English physicians uniformly completed their studies at the parent university in France (Talbot 68). This close relationship provided the English Doctors of Physic with access to important Continental works on medicine as well as allowing greater dissemination of their own writings. Brilliant teachers such as Albertus Magnus at Paris influenced such medical luminaries as Roger Bacon, Peter of Spain, Vincent of Beauvais and William of Conches, whose works were well known in academic medical circles from the thirteenth century onward (Talbot 84-5).

Surgical training differed from the theoretical instruction afforded to learned medical practitioners, but, like their university counterparts, the most skilful surgeons relied on textbooks relating principles and techniques from Greek and Arabic surgical manuals. Galen and Avicenna provided physiological explanations underlying surgical practices (Reisman 347), but the most influential treatise on practical surgery belonged to the Islamic author known as Albucasis (Abu 'l-Qasim uz Zahrawi, 921-61). Translated by Gerard of Cremona, the surgical portion of Albucasis's larger overview of medicine was eagerly adopted by the Christian West because of its clear explanations, illuminating diagrams and effective methods (Talbot 33). Albucasis preferred cautery to all other forms of surgical intervention, a bias not lost upon his medieval followers

(Campbell 82). Few surgeons in England were university-trained; the majority, especially outside the major centres, were barber-surgeons who performed minor procedures (Gottfried 41). Cauterization provided a less life-threatening treatment than incision or suture for many common problems. In addition, the application of hot iron was considered efficacious in realigning the humoral balance of the body. Although the barber-surgeons occupied the lowest level of the surgical hierarchy, most were at least competent for the limited tasks they performed, some were good and a few were outstanding healers (Gottfried 73).

Like many university-educated physicians and surgeons, the Dominican Theodoric of Lucca (1214-98) ignored injunctions prohibiting clergy from practising surgery. Drawing upon Albucasis as well as some of his medieval disciples, Theodoric wrote a textbook, the _Chirurgia magna_, which was widely consulted by literate practitioners in England and Europe (Talbot 98). The best known surgeon of the Middle Ages, however, was Guy de Chauliac (1300-68), who received his university training at Paris. Heavily dependent upon Graeco-Arabic medicine, especially the works of Albucasis, de Chauliac's _Churgerie_ became a standard surgical authority in Europe for two centuries (Riesman 208).

In England, John of Arderne (1307-97) did not attend university, but his works reveal a man of liberal education. He referred to himself as _cherurgus inter medicos_, a surgeon among physicians. Because Arderne was trained on the battlefield, his medical education was practical rather than theoretical, yet in his treatises he quotes most of the acknowledged medical authorities (Talbot 121). Numerous copies of his works, especially the De fistula in ano, attest to their popularity in the late Middle Ages (Talbot 123). Even though in England the status of surgeons remained inferior to that of university-trained physicians, their craft gradually gained public recognition and sympathy. Instrumental to their growing popularity was their willingness to confront the plague in an active, if somewhat less than effective, way, and the relative success of their surgical procedures. In his history of medicine in medieval England, Talbot explains:

> Physicians treated the Black Death with new twists on old themes, or with traditional advice on diet and calls for moderation. They rarely came in contact with the afflicted, which was perhaps not such a bad idea, but their images suffered. Surgeons, cutting and sawing, using opiates and ointments, and above all always taking a direct and active approach, were not much more successful than the physicians. But they seemed at least to be trying. It is not surprising that the most critical anti-medical sentiments expressed in the late middle ages were aimed at the physicians. (55)

Both physicians and surgeons relied on the legacy of learning carried in the corpus of Greek and Arabic texts, but the surgeons, perhaps because of the practical nature of their day-to-day duties, demonstrated an innovative spirit lacking in their more academic colleagues.

By the beginning of the fourteenth century, physicians in universities had synthesized the ideas of medical writers in the preceding centuries, and there the progress of medical thought became arrested for several hundred years (Talbot 198). Academic doctors embraced a logical system of physiology which was essentially Galenic, seen through the filter of Islamic Aristotelianism. As Siraisi points out, the influence of this codified structure was considerable:

> The institutional organization of university faculties of medicine, parts of the actual curriculum and the claims to social and intellectual primacy of university-trained physicians within the hierarchy of practitioners all exhibited much continuity between the thirteenth and the seventeenth, and in some respects and some places, between even the thirteenth and the eighteenth centuries. Moreover, although medieval and early modern universities enrolled only a minority of all medical practitioners, university curricula systematized the transmission and reinforced the authority of a body of books, concepts and techniques that provided the basis for medical practices and beliefs broadly disseminated throughout society. (48)

That "verray, parfit praktisour" (GP 30; I.422),[5] Chaucer's estimable Doctour of Phisik, is well acquainted with the standard medical authorities of the late Middle Ages. His list of sources includes the Greek masters, the Arab commentators and contemporary English physicians:

> Wel knew he the olde Esculapius,
> And Deyscorides, and eek Rufus,
> Olde Ypocras, Haly and Galyen,
> Serapion, Razis and Avycen,
> Averrois, Damascien and Constantyn,

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[5] All subsequent quotations from Chaucer's works will be taken from The Riverside Chaucer. The titles will be indicated by the abbreviations used in this edition, and references will include both page and line number.

> Bernard, and Gatesden, and Gilbertyn.
> (GP 30; I.429-34)

Competent in his profession, the Doctor reveres his medical mentors more highly than spiritual writings: "His studie was but litel on the Bible" (GP 30; I.438). In this failing he reflects the focus of medical studies on the pagan Greeks and Arabs, but the essential amorality of medical writing is also suggested. As Joan Cadden observes, Christian ethics and theology did not hinder scientific writers in the late Middle Ages from speaking frankly and openly about sexual matters, including even contraception and abortion. The concern with these subjects can be attributed to the Greek and Arab writers, but few of their Christian commentators suppressed chapters dealing with such ethically dubious material ("Medieval and Scientific Views" 160). Chaucer's physician, like many of the authorities which I consult in this dissertation, balances piety against impartial scientific interest.

In demonstrating the applicability of some common medical ideas to late medieval literature, this dissertation draws upon the textbooks of academic medicine as they were known to Chaucer's physician. Because the theories often receive their fullest elaboration in Greek medical writings, these are quoted so that the basis of later thought may be readily apprehended. The Islamic writers interpreted and systematized Greek medicine, and their influence on medieval English medicine can hardly be overestimated. To show the lines of transmission, I refer to the Arabic writers as well. Finally, late medieval authorities, including the very popular encyclopedias, are consulted. These are mentioned as proof that the ancient theories survive and flourish in the thirteenth and fourteenth centuries. Siraisi's observations regarding the temporal and social homogeneity of late medieval medical thought receive verification in the remarkable consensus on basic medical concepts which is evident in these writings.

In addition to their contribution towards an understanding of late medieval thought, the medical concepts discussed in this dissertation illuminate the literature of the period. Chaucer's works provide an ideal beginning for such an investigation because of his prominent position in the literature of the age and because of the tradition of scientific explanations attached to his writings. I have chosen "The Reeve's Prologue," "The Merchant's Tale" and "The Miller's Tale" as selections from *The Canterbury Tales* because the medical background to these passages demonstrably aids modern understanding of the medieval text. I hope that my analysis serves to exemplify a technique which may be applied more broadly both to Chaucer's works and more generally to other Middle English writing.

CHAPTER ONE

"GRAS TYME IS DOON": OLD AGE AND THE REEVE

Early in the prologue to his tale, Chaucer's Reeve complains that he is old, illustrating his condition with a progression of arresting metaphors which have received frequent critical praise. Having proclaimed his elderly inability to "pleye," the Reeve compares his state to the dryness of hay, to the putrefaction of mould, to the rotting medlar, to old ashes, and finally to the wine cask emptying over the span of a lifetime. A. H. MacLaine remarks that "the powerful and morbid impression of senility which Chaucer here achieves results from the cumulative force of a series of vivid images, arranged in climactic order" (129). Carol Falvo Heffernan also admires the "powerful images of senility" in this passage, concentrating on the final, "most evocative" metaphor of the cask of life (37). Justly lauded for its literary brilliance in depicting the debilities of old age, "The Reeve's Prologue" also exploits medical commonplaces to emphasize and validate Oswald's lament. Although MacLaine and Heffernan have demonstrated that the final image draws on religious and sexual allusions as well as on Chaucer's practical experience of the vinter's trade, the medical thought which underlies this as well as the other images has not been investigated. An understanding of late medieval geriatric theories shows that, in addition to informing the metaphors, these explanations provide links among the images themselves and between the Reeve's description in "The General Prologue" and his character as revealed in the prologue to his tale.

1. Grass and Hay

MacLaine claims that the first metaphor in "The Reeve's Prologue" likens the old man to a horse retired to the stable after pasturing freely: "Gras tyme is doon; my fodder is now forage" (RvPro 77; I.3868). He overlooks, however, the focus of this image. Instead of concentrating on the horse, which is never specifically mentioned, Chaucer centres on the transformation from moist, spring grass to the dry hay of autumn and winter, a change which traditionally relates the aging year to aging humanity. Recalling the brevity and inconsequence of human life, various passages in the Bible liken mortal existence to grass which flourishes in spring and summer, dries in autumn and decays in winter. The psalmist writes:

> Mane sicut herba transeat;
> Mane floreat, et transeat;
> Vespere decidat, induret et arescat.
> [In the morning (mankind) is like the grass which flourishes;
> In the morning it flowers, and flourishes;
> In the evening it drys out, withers and is cut down.] (Ps. 89.5-6)
>
> Homo, sicut foenum dies eius;
> Tanquam flos agri sic efflorebit
> Quoniam spiritus pertransibit in illo, et non subsistet:
> Et non cognoscet amplius locum suum.
> [As for man, his days are like grass;
> He blossoms like a flower of the field
> For the wind passes over it, and it does not live:
> And its place is known no more.] (Ps. 102.15-16)

Similarly, the fortieth chapter of the book of Isaiah contains a reference to transient mortality. The unnamed wind of the Psalms is here identified as the breath of God, the natural cycle of existence being placed firmly within the Divine plan:

> Omnis caro foenum
> Et omnis gloria euis quasi flos agi.
> Exsiccatum est foenum, et cecidit flos,
> Quia spiritus Domini sufflavit in eo
> Vere foenum est populus.
> [All flesh is grass,
> And all its glory is like the flower of the field.
> The grass drys out, and the flower fades
> Because the breath of the Lord blows on it.
> Truly the people are grass.] (Isa. 40.6-7)

Perhaps inspired by such Biblical sentiments, poets of the Middle Ages appropriate this image to their own concept of mutability. In the Confessio Amantis, for example, John Gower compares human aging with the drying of grass. Having pointed out that although the will of the elderly speaker "is good ynowh" (2426), Venus rather cruelly reminds Amans that his physical capabilities preclude love's service: "But mor behoveth to the plowh, / Wherof the lacketh, as I trowe" (2427-28). She advises him that the pursuit of love amounts to folly in the aged:

> That which was whilom grene gras,
> Is welked hey at time now.
> Forthi mi conseil is that thou
> Remembre wel hou thou art old. (2436-39)[1]

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1. See Robert Mangan, "Sex and Senescence in Medieval Literature:"

> We find in the Confessio Amantis the mythology of sexual senescence as developed by the confluence of Christianity and courtly love. When the goddess of love refuses to consider the plea of the would-be Lover until he has confessed to her priest, she turns the Lover over to the voice of moral and social responsibility. When the priest is unable to persuade the Lover to accept that law which is governed by reason and not by desire, Venus resorts to shock treatment. She is not interested in his feelings of love, no matter how

Lydgate's meditation on temporality commissioned by the Queen after she had walked in the newly mowed meadows begins: "Ther is full lytell sikerness / Here in this worlde but transmutacion" (809; 1-2). Each of the first sixteen stanzas, including those which observe bodily decay and the translation of human beauty into "rymplyd age" (45) concludes with the one-line refrain, "That now is heye some tyme was grase." The final stanza celebrates Christian hope in the Celestial City which transcends earthly mutability so that "Ther is no heye but all fresh grase" (136). Likewise, the anonymous author of the "Complaynt of Criste" explicitly connects human life with meadow grass: "Furst A man growys As A gras, / And Afftyr-warde welkythe as flower or hay" (Furnivall 191-92). Loss of moisture causes grass to wither, to become dry and brittle and to lose its hue. A similar depletion of moisture produces corresponding effects in the elderly, according to theories of geriatrics current in the thirteenth, fourteenth and fifteenth centuries.

Classical physicians and their medieval disciples teach that innate heat, the origin and preserver of life, resides in the heart. As the fountain of heat responsible for all physiological activity, the heart radiates its self-generated warmth to both vital organs and extremities, permeating and animating all parts of the living organism. Aristotle writes:

> courtly or virtuous. In pointing out the physiology of senectus, she destroys the spirit of juventus. (25)

> Cor enim in parte priori, atque in medio situm est: in quo principium vitæ, omnisque motus, & sensus esse censemus.
> [For the heart is placed in the front and center of the body: in which (i.e., the heart) we agree is the principle of life and the source of all motion and sensation.]
> (De part. an. 154v; bk. III, ch. III)

Galen echoes Aristotle's teaching in arguing similarly for the predominance of the heart above the other bodily organs:

> Quum igitur cor caloris nativi, quo animal regitur, quasi fons quidam ac focus sit, omnis eo modo ipsius pars principatum teneat, at magis hae, quarum usus toti animali vitam conservat.
> [Therefore since the heart is a sort of fountain and focus of the innate heat which rules the animal, every part of the animal is thus important, but most important are those parts whose use is to conserve the life of the animal.]
> (De usu 436; bk. VI, ch. VII)

Surrounding the heart in its "melius nobilius" [most noble][2] position, the lungs, organs of respiration, cool the intensity of the innate heat which left untempered would consume itself too rapidly:

> Marcor autem propter copiam caliditatis. Et enim si excedat quod circum est calidum, & alimentum non accipiat, corrumpitur quod ignitur, non frigescens sed marcescens. Quare necesse est fieri refrigerationem, si debet salutem adipisci hoc enim auxiliatur ad hanc corruptionem.
> [But exhaustion (of the fire of life) is caused by a great amount of heat. And if there is an excess of heat around and no food as fuel is added, the fire goes out because of exhaustion, not because of cold. Therefore it is necessary to its

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[2] De part. an. 154r; bk. III, ch.3. Galen also insists on the central location of the heart, even though it is not centered in any of the animals he dissected: "Nam ipsum in medio omnini thoracis collocavit . . ." [but this (the heart) is situated in the middle of the thorax in all animals . . .] (De usu 415; bk. VI, ch. VI).

> continuation that it be cooled, for coolness is helpful against this kind of corruption.]
> (De iuuentute 154v; ch. 10)

Galen expands the rather abbreviated explanation provided by Aristotle, emphasizing the importance of respiration in keeping the temperature of the animal within reasonable limits:

> Usum respirationis in animalibus cordis causa inesse docuimus, simul quod et ipsum aëris substantium requirit, simul etiam potissimum, quod fervido calore effervescens refrigerari desiderat. Refrigerat ipsum inspiratio quidem frigidam qualitatem ei affundens, expiratio vero, quod in ipso fervet et quasi combustum ac fuliginosum est, ex ipso profundens.
> [I have taught that the use of breathing is inherent in animals by reason of the heart which on the one hand requires the substance of the air (to produce the life-giving spiritus), but on the other hand desires very greatly to be cooled because it is boiling with heat. Inhalation cools it by supplying an abundance of cold, while exhalation pours forth the glowing hot and, as it were, inflamed and burning material contained in it.] (De usu 412; bk. VI, ch. II)

If the natural warmth of the heart suffers extinction, death results, for life depends on heat maintained by a certain kind of bodily moisture. Aristotle observes that the fire of life, like flames in the natural world, can be put out by extinction or exhaustion. Extinction results from sudden violence to the organ, exhaustion from a scarity of fuel combined with insufficient cooling and tempering. Working properly, the lungs assure that the heart never becomes overheated, but, if the organs of respiration dry out through old age or disease, the fire of life can literally burn itself out by becoming too intense. In fact, Aristotle attributes death in old age primarily to a defect in the cooling mechanism of the body which dissipates too readily the remaining natural heat (De iuuentute 150v-51r; ch. III).

Innate heat is established by nature before birth, constituting an inherent property of living things which diminshes over the span of a lifetime so that in old age very little remains:

> Oportet enim accipere quod animal est natura humidum & calidum, & ipsim viuere tale, senectus autem frigida & sicca, & quod mortium videtur enim sic.
> [From this it is accepted that an animal by nature is humid and warm, and this resembles living things, but old age is cold and dry, and it is seen that a corpse is like that.]
> (De long. vitæ 145v; ch. 3)

Throughout life the natural warmth must be fed and maintained by bodily moisture, just as oil in a lamp must be fed by its fuel:

> . . . quippe quæ dempto oleo, lumen admittere cogatur. Senectus vero in animatorum genere illud idem efficit, & morbus longus diutino consumptu corpus in tabem redigens; alimento nanque deleto, vel extenuato caloris, euenit, vt calor etiam ipse deficiat: calor enim humore alitur, non tamen quolibet humore, sed leni, & copioso.
> [. . . for when the oil is expended, the light goes out. In living creatures old age and long diseases leading the body into decrepitude by long-term wastage have a similar effect. For when the fuel which feeds the heat is removed or diminished, the result is that heat fails; for heat is fed by moist humours, not however by any kind of moisture but by that which is smooth and plentiful.] (Prob. 11v; bk. III, qu. 5)[3]

As the body ages, its natural moisture diminishes until the already weakened spark of life simply runs out of fuel.

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[3] Thomas S. Hall, "Life, Death and the Radical Moisure," provides a good summary of the evolution of this idea in classical and medieval writings.

Moisture necessary to the maintainance of the innate heat originates in food which is "concocted" or processed literally by cooking, first in the stomach, next in the liver and finally in the organs, including the heart itself. Nutrients ingested by the living organism undergo a series of refinements, becoming progressively more pure and useful to the body. In a lengthy passage of the Canon Avicenna describes the complete process, explaining that digestion, beginning with mastication, enters its first phase in the stomach where heat transforms food into chyme, a fluid "which resembles thick barley water." Its lighter and thinner portions are absorbed by the stomach and the intestines as nourishment, but the heavier residue passes to the liver where the bodily warmth matures it, forming bile, choler, phlegm and the purest of all humours, blood. Ascending to the heart through the vena cava, the pure hot blood nourishes the flame of life as well as becoming even further refined before dispersing to other very refined tissues (Gen. Prin. 44).[4]

The cooking process in all its stages requires vital heat emanating from the heart, but in the elderly this heat is already diminished. Nutrients cannot undergo satisfactory digestion, a failing which results in an even further diminution of the life force. A circular movement ensues wherein the feeble innate heat becomes insufficient to produce the moisture necessary to feed itself, thereby growing progressively weaker until extinguished entirely. Aging, therefore, is perceived as both the cause and the result of the body cooling off and dessicating, for innate heat plays a vital role in the origin of the humours themselves:

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[4] See De usu 409-10; bk. VI, ch. I for Galen's discussion of respiration and the pure, thin, spiritous blood produced by the heart.

> . . . atque idcirco tum nutritionem, tum concoctionem, tum omnem generationem; iam vero et in excrementis ipsis qualitates a calore innato provenire.
> [. . . and that therefore both nutrition and digestion (concoction) and generation of all the humours, as well as the qualities of the excreted substances result from the innate heat.]
> (De nat. fac. 89; bk. II, ch. 4)

Aristotle's theories filtered through Galen's commentaries form the basis of the Islamic works on the nature of innate heat and its relation to the aging process. In his influential Canon Avicenna expertly transmits the classical position:

> . . . the temperament of man has more of heat and moisture because the source of all life--the heart and vital force--is very hot and inclined to be excessively so. Similarly heat is essential for human life and moisture for growth and development. Heat is maintained by moisture, and, indeed, nourished by it. (Gen. Prin. 25-26)

Most plentiful in childhood because the young are closer to the hot vital semen which gave them life, natural warmth declines in middle age through old age, until it is entirely used up: "The innate heat gradually disperses; the moisture and secretions of the various parts of the body also dry up constantly from normal physical and psychological activity" (Gen. Prin. 34). Avicenna here demonstrates his orthodox Galenism, for the Greek physician explains that the drying process begun when male and female seed coagulate to form an embryo continues throughout life:

> Atque ita nobis utrinque ex humida substantia principium generationis est, hanc tamen humidam servari conveniens non erat, si modo ex ea nervi, arteriae, venae, ossa, cartilagines, membranulae et alia id genus fieri deberent. Assundi equidem statim ab initio generationis validius in temperamento oportuit elementum id, quod siccandi vim haberet. Est vero id natura quidem maxime ignis. . . . Ab hoc igitur primum cogitur, paulumque concrescit, quod in utero conceptum est; mox siccius redditum veluti lineamenta quaedam et rudimenta cujusque partis obtinet. Ulterius vero etiam siccescens non lineamenta rudimentave modo, sed etiam exactam uniuscujusque speciem ostendit. Iam vero in lucem editum tum siccius, tum valentius se ipso semper efficitur, donec ad florem pervenerit aetatis. Tum vero et incrementum omne sistitur, ossibus nimirum ipsis per siccitatem non ultra sequacibus, et vas unumquodque in latum extenditur, cunctae denique partes non solum robustae, sed etiam vires suas summas obtinent. In eo vero, quod sequitur, tempore, omnibus iam instrumentis plus justo siccescentibus, non solum cujusque functio minus probe perficitur, sed etiam animal ipsum macilentius graciliusque, quam ante, redditur. Ergo, plus satis siccatum non macilentius modo, verum etiam rugosum efficitur. Artus quoque ipsi invalidi atque ad motus suos instabiles sunt. Atque talis quidem affectus senium appellatur, ei, quae in stirpibus arefactio dicitur, proportione respondens: est enim et illa stirpis senium, siccitatis excessu proveniens.
> [Therefore from two sources the beginning of our generation is from a moist substance, but it was not suitable for it to remain moist if it was to produce nerves, veins, arteries, bones, cartilages, membranes and other such tissues. Therefore it is necessary, from the the very beginning of generation, that there be added an element harder in character which should have the power of drying. Such in nature especially is fire. . . . From this, then, that which was conceived in the uterus is first formed and takes on a little firmness; and after this, drying more, acquires the outlines and faint patterns of all of its parts. Then, drying even more, it assumes not only their outlines or patterns, but the exact

> appearance of each one. And now, having been born, it keeps growing drier and stronger until it reaches full development. Then all growth stops, the bones growing no longer because of their dryness, and every vessel increases in width, and thus all parts become strong and achieve their maximum power. But in time, as all organs become even drier, not only are their functions performed less well but their vitality becomes more feeble and restricted. And drying more, the creature becomes not only thinner but more wrinkled, and the limbs weak and unsteady in their movements. This condition is called old age, and is analagous to the withering of plants; for that is likewise the old age of a plant, arising from excessive dryness.] (De sanitate tuenda 5-6; bk. I, ch. II)

Cold and dryness dominate the elderly constitution because of the natural dissolution of the vital warmth, but, concurrently, abnormal moisture increases. In an apparent contradiction, dry old age evidences a superfluity of extraneous moisture obvious in the watery eyes, nasal discharge and increased salivation attributed to the elderly. Virtually every description of the ills of old age from classical writings onward alludes to the disgusting prevalence of increased noxious bodily fluids. For example, the De miseria conditionis humanae composed by Pope Innocent III provides a dismal list detailing the discomforts of old age:

> Si quis, autem, ad senectutem processit, statim cor eius affligitur et capud concuitur, languet spiritus et fetet anhelitus, facies rugatur et statura curvatur, caligant oculi et vacillant articuli, nares effluunt et crines defluunt, tremit tactus et deperit actus, dentes putrescunt et aures surdescunt.
> [If however one does reach old age, his heart weakens and his head shakes, his spirit fails and his breath stinks, his face wrinkles and his back bends, his eyes dim and his joints falter, his nose runs and his hair falls out, his touch trembles and his competence fails, his teeth rot

and his ears become dirty.] (107-08)[5]

Bartholomaeus, too, comments that superfluous moisture plagues the elderly: "Þe olde man is itraueiled and greued wiþ cou3ynge and spettynge and wiþ oþir greues" (Trevisa 1. 293).[6] Avicenna explains that this extraneous moisture consists mostly of abnormal phlegm. Advantageous in its normal state because it lubricates and moistens joints and internal organs, phlegm exhibits a cold and moist temperament. When produced by mild heat and cool, moist food during the digestive process, normal phlegm forms a necessary part of a balanced constitution (Gen. Prin. 38). In the elderly, however, the impaired concoction of food due to diminishing innate heat results in far more phlegm than can be assimilated into the blood and body tissues, an abnormal condition contributing to the rheumy excesses of old age (Gen. Prin. 46).

Medical authorities unanimously agree that the discomforts of old age may be countered by redressing the imbalance of cold, dry humours. Avicenna counsels, "The management of health preservation for old persons briefly consists of moistening and warming measures" (Gen. Prin. 338). Extraneous phlegm should be eliminated as much as possible, and the fragile fire of life should be tended by the maintainance of external heat. The allotment of innate

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5. Trans. Robert E. Lewis.

6. See also Mangan's discussion of the influence of the rhetorical tradition upon the understanding of old age in the Middle Ages (22-23).

heat and moisture differs for each individual, but it is possible to maximize lifespan within the given parameters. Avicenna admonishes his readers:

> Preservation of health aims at no more than to arrest the rapid dispersal of innate moisture for if the innate moisture could be saved from the deleterious effect of these processes [i.e., activities which sap the supply], it would be at least possible to fulfil the requirements of the fixed span of life assigned to each individual according to his innate and original temperament. (Gen. Prin. 282)

According to demographic studies, between five and ten per cent of the population during the Middle Ages survived past the age of sixty years. During the later plague epidemics, this percentage rose considerably higher because of the depletion of children and young adults who were more susceptible to mortality because they had not built immunity through repeated exposure.[7] To this elderly community were addressed a handful of treatises dealing with the care of old age, the most notable being a compendium of academic medicine and occult folk teachings entitled De retardatione accidentium senectutis, with its corollary, the Liber de conservatione iuuentutis.[8] Citing various Greek and Islamic texts but concentrating mainly on Avicenna's Canon, Bacon's presentation of the physiology of old age remains faithful to the Galenic principles embraced by the Arabs. The obvious signs of aging result from a decrease of heat and useful moisture:

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[7] Russell, "How Many of the Population Were Aged?" 120. See also Russell, British Medieval Population and Acsádi, History of Human Life Span and Mortality for a discussion of population trends in medieval Europe.

[8] Attributed to Roger Bacon, this tract remained relatively obscure in its own right until the sixteenth century, but early in the fourteenth century it became the source for an important work by Arnaldus Villanova. Villanova added several pages of prescriptions, altered some of the language slightly and claimed the treatise as his own. A student, then a teacher at the University of Paris where Bacon instructed, Villanova may have studied under the famous Franciscan; he certainly would have become aware of Bacon's interests (Haven 27). Luke Demaitre comments that Arnaldus's plagiarism may have been overstated by modern

> Sed senectus et senii accidentia proueniunt ex debilitate caloris naturalis, et debilitas caloris naturalis prouenit ex dissolutione naturalis humiditatis et augmento extranee.
> [But old age and its symptoms proceed from a decrease in natural heat, and a decrease in natural heat proceeds from a lack of natural moisture and an increase of extraneous moisture.]
> (De retardatione 6)

Like Avicenna, he pronounces superfluous moisture produced by insufficent digestion to be exceedingly harmful: "Sed fleuma extraneum est omnibus extraneis humoribus deterius" [but extraneous phlegm is worse than all extraneous humours] (De retardatione 10). Although he recognizes that old age cannot be forestalled indefinitely, he suggests a regimen of heat and moisture to restore and retard the ravages attendant upon aging.

Bacon's text forms part of a corpus of geriatric theory available to students at major medieval universities where Aristotle's works on old age, supplemented by commentaries by such medieval luminaries as Albert the Great and Peter of Spain, were taught along with works by Avicenna and Averroës (Lewry 26). All authorities concur that old age originates in a diminution of innate heat and natural

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commentators ("The Care and Extension of Old Age in Medieval Medicine" 5).

moisture, attended by a superfluity of harmful, cold humours such as phlegm. Galen's image of the lamp and its faltering supply of fuel pervades the writings of the period. The concept of innate heat and its relation to the preservation of life and the balance of humours originated in academic works addressed to physicians and philosophers, but, like other principles of physiology, it was transmitted to the literate laity through the encyclopedias.

In the scholarly Speculum naturale, for example, Vincent of Beauvais cites Rhazes's identification of the heart as the source of innate heat:

> Cor itaque fecit Deus vt effet fons & origo caloris naturalis & vt ab eo totum corpus per arterias quæ ab ipsa procedunt ad omnia membra calefieret. . . .
> [And thus God made the heart, in effect, the fountain and origin of natural heat, and from it heat proceeds to the whole body by means of the arteries. . . .] (Spec. 2032; bk. XXVIII, ch. LX)

Quoting Aristotle, Vincent places the heart in the middle of the body where it may be cooled by pulmonary activity:

> Cor est lucerna corporis, vt dicit philosophus, vnde & in medio collocatur, & eius virtus ad omnia membra extenditur.
> [The heart is the oil lamp of the body, as the philosopher says, placed in the middle of the body, and from that place its strength extends to all members.] (Spec. 2033; bk.XXVIII, ch. LX)

Later, he refers to Isidore's Etymology in ascribing a cooling of the blood to old age:

> Senes à sensus diminutione quidam dictos esse putant, eo quod iam per vetstatem desipiant. Nam physici stultos esse dicunt frigioris sanguinis homines, calidi vero prudentes. Vnde & senes in quibus iam friget, & pueris in quibus necdum calet, minus sapiunt.
> [The term "senes" comes from a diminution of sense, because through advanced age men act

> foolishly. For physicians say that fools are men of colder blood, prudent men of hot. Thus old men, in whom the blood has become cold, and boys, in whom it has not yet become warm, have less wisdom.] (Spec. 2360; bk. XXXI, ch. LXXXVII)[9]

Vincent also refers to the humoural configuration of the elderly in his discussion of the stages of life. Commenting that semen production is lessened in the old as compared to the young, he explains that weak and elderly men manufacture less sperm: "Senes autem & decrepti præter hoc quod sunt frigidiores sunt etiam sicciores . . ." [But the elderly and decrepit especially (produce less semen) because they are more cold and more dry . . .] (Spec. 2364; bk. XXXI, ch. XCI). He invokes Avicenna's advice to moisten and warm the aged body: "Summa regiminis senum est operari, quod califaciat & humectet" [The ultimate aim of a way of life for the old is activity because it warms and moistens] (Spec. 2362; bk. XXXI, ch. LXXXIX). Warm baths, hot foods, restorative sleep and the purging of superfluous phlegm are all recommended to replenish heat and humidity lost through time's natural effects.

Similar observations occur in the De proprietatibus rerum. Having identified heat as the "crafty worchere of al þat is gendred and principal worchinge cause" (Trevisa 1. 130), Bartholomaeus reiterates Aristotle's contention that the heart produces heat to impart life and movement to every part of the body. In advanced age, the blood cools because of decreasing innate heat. Bartholomaeus cites Isidore when listing the evils attendant upon elde, a process of drying and shrinking:

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[9] See Isadore 50.

> For in þis elde kynde hete quenchiþ, þe vertu of gouernaunce and of re[u]leynge failiþ, humour is dissolued and wastid, myȝt and strenþe passith and faileþ, fleisch and fairnes is consumpt and spendiþ, þe skin riueliþ, þe sinewis schrinken, þe body bendiþ and crokeþ, fourme and shap is ilost, fairnes of þe body brouȝt to nouȝt.
> (Trevisa 1. 293)

This dessication can be delayed by careful attention to proper nutrition: "In olde men it [food] tempriþ kinde hete and restorith what is ispend and iwastid, and kepiþ þe body þat it be nouȝt al ylost" (Trevisa 1. 321).

The geriatric theory of the Middle Ages, as understood by trained physician and interested layman alike, was grounded on a conception of innate heat and its paramount role in maintaining the body. Allotted in different quantities to various individuals, its decline heralded a disintegration of physical beauty observable in slackness of skin, wrinkles and grey hair. The Reeve's first metaphor joins the other figures in his long litany of complaint which operate within this medical framework. In depicting the translation of grass from the young green shoots of spring to the dry hay of autumn, Chaucer conflates allusions, evoking a full range of connotations from Biblical to medical in a single aphorism: "Gras tyme is doon."

2. The Mouldy Hair

Implicit in the decline from green grass to yellowed hay is the loss of colour attendant upon age, an image not lost upon the medical writers. Galen likens the signs of old age to the drying of plants:

> Atque talis quidem affectus senium appellatur, ei quae in stirpibus arefactio dicitur, proportione respondens: est enim et illa stirpis senium, siccitatis excessu proveniens.
> [This condition is called old age and is analogous to the withering of plants; for that is likewise the old age of the plant, arising from excessive dryness.] (De sanitate tuenda 6; bk. I, ch. II)

Avicenna employs this very image when introducing his discussion of grey hair, perhaps inspired by Galen's analogy. Having identified old age and sickness as usual causes for loss of hair color, he explains: "Sometimes grey hair is a sign of extreme dryness as in the case of plants which lose their dark green colour and turn white on account of dryness" (Gen. Prin. 221). The Reeve, too, develops his lament in exactly this direction, commenting, "This white top writeth myne olde yeris; / Myn herte is also mowled as myne heris" (RvPro 77; I.3869-70). Composed of solidified smoky vapours emanating from the body, hair flourishes because of a concentration of heat and moisture. Aristotle explains:

> Horum animalium maxime piloso capite est, cuius rei causa tum ad necessitatem tum ad persidii rationem referenda est. necessarium enim propter cerebri humiditatem commissuras caluæ: nam vbi plurimum humoris calorisque est, ibidem ortum pilorum esse copiosum necesse est. . . .
> [Of all animals man has the most hair on the head. This in the first place is the necessary result of the fluid character of the brain and of the presence of so many sutures in his skull. For wherever there is the most fluid and the most heat, there must necessarily occur the greatest growth of hair. . . .]
> (De part. an. 145r; bk. II, ch. 14)

Galen teaches that the sutures of the human skull exist as exit vents for hot vapours ascending through the body:

> . . . in cranio vero (sic enim nominantur id os, quod totum ambit cerebrum) conspicuas ac sensiles viæ natura vaporosis his ac fuliginosis excrementis secuit, non modo propter causam praedictam, quae sane partibus omnibus est communis, verum etiam ob privatam, quae sibi a situ ipso accedit; nam partibus corporis omnibus caput, velut tectum quoddam calidae domui, est superpositum. Quo fit, ut, quum omnia, quae a partibus subjectis sursum efferuntur, fuliginosa ac vaporosa excrementa caput excipiat, largiore egeat vacuatione.
> [. . . in the cranium (so this bone which totally surrounds the brain is called) nature has cut these visible and sensible passages for burning hot, vaporous residues, not only for the reasons just presented which are common to all parts of the body, but for a special reason which applies to this part because of its position. For the head is above all parts of the body like the roof of a warm house, and since it receives the burning hot vaporous residues rising from the lower parts, it requires more evacuation.]
> (De usu 688; bk. IX, ch. I)

He further likens the abundance or deficiency of hair growth to a farmer's field where sufficient warmth and moisture produce bountiful crops, differentiating, however, between the orderly hairs such as eyebrows and eyelashes which grow in a fixed number and length, and irregular body hair such as that of the armpits and pudenda which grows copiously in those of a warm, moist constitution (De usu 908-09; bk. XI, ch. 14).

Given the close connection between heat and moisture in a body and the condition of the hair, the explanation for greying in age does not pose a problem. Although a young healthy individual grows lustrous hair of an even colour, as the body dries and cools producing noxious vapours because of inadequate digestion, the hair's quality changes. The Problems state explicitly that grey hair represents a putrefaction: "canities autem putredo veluti quædam est" [thus greyness is just like corruption] (Prob. 32; bk. X, qu. 36). This decay owes its origin to two processes endemic to the elderly: dryness and an abundance of phlegm. This white humour joined by other unwholesome substances rises to the head, where it causes mouldiness in the emerging hairs. Aristotle presents a long and finely reasoned explanation of the similarities between grey hair, mould and hoar frost which belong to the same family because they originate in vapours. However, whereas hoar frost comes from undecayed vapour, both mould and grey hair begin with vapour which has putrified:

> Canities autem pilorum propter etatem fit propter imbecillitatem et defectum caliditatis. Et enim etas omnis declinat declinante corpore et in senectute ad frigiditatem: senectus enim frigida et sicca est. . . . Quibuscumque igitur hominum natura pilorum est pauci caloris et amplior est ingrediens humiditas, propria caliditate non potente digerere putrefit ab ea que in continente caliditate. Fit autem putefactio a caliditate quidem omnis, non complantata autem, sicut dictum est in alteris. Est autem putrefactio et aque et terre et corporalium omnium talium, propter quod et terrestris vaporis ut puta dictus ebros: et enim ebros est putrefactio terrestris vaporis. Quare et in pilis tale existens alimentum non digestum putrefit, et fit vocata canities. Alba autem, quia et ebros solum putridorum, ut est dicere album est. Causa autem huius quia multum habet aerum: omnis enim terrestris vapor habet vitutem aeris grossi. Quasi enim contraversum pruine ebros est; si quidem enim congeletur ascendens vapor, pruina fit, si autem putrefiat ebros. Propter quod et in superficie sunt ambo: vapor enim supernatans. Et bene itaque poete in

> comediis transferunt deridentes, canos vocates senectutem ebrota et pruinam. Hoc quidem enim generi hoc autem speciei idem est: pruina quidem enim generi (vapor enim ambo), ebros autem speciei (ambo enim putredo).
> [But grey hair caused by age results from a weakness and a deficiency of heat. For at all times of life when the body declines in strength it declines to cold, especially in old age which is cold and dry. . . . Whenever, then, the hair in man has naturally little heat and too much moisture enters it, its own proper heat is unable to concoct the moisture and so is decayed by the heat in the surrounding air. All decay is caused by heat, not by the innate heat just as has been stated elsewhere. And as there is a decay of water, of earth, and of all such material bodies, so there is also of the earthy vapour, for instance what we call mould, for mould is a decay of earthy vapour. Thus also the inherent nutriment in hair decays because it is not digested, and what is called greyness results. It is white because mould also, practically alone among decayed things, is white. The reason for this is that it has much air in it, all earthy vapour being equivalent to thick air. For mould is, as it were, the antithesis of hoar frost; if the ascending vapour is frozen it becomes hoar frost, if it is decayed it becomes mould. Hence both are on the surface of things, for vapour is superficial. And so the comic poets make a good metaphor as a joke when they call grey hairs "mould of old age" and "hoar frost." For the one is generically the same as grey hairs, the other specifically: hoar frost generically (for both are a vapour), mould specifically (for both are a form of decay)]. (De gen. an. 168; bk. V, ch. 4)

Bacon's tract on the symptoms of old age cites "canicies" as the first sign of advancing years. Putrid humours such as phlegm produced by a deficiency in natural heat cause this unwelcome transformation:

> Canicies contingit ex fleumate putrido egrediente a stomacho vel cerebro, ut Yssac dicit, et non solum videtur hoc accidens ex solo fleumate putrido prouenire sed omni alio humore putrido, ut dicit Auicenna in capitulo de complexionibus etatum.
> [Grey hair is caused by putrid phlegm proceeding from the stomach or the head, as Isaac says, and

> we see that this symptom is produced not only by putrid phlegm alone but by all other putrid humours, as says Avicenna in the chapter on the complexions of various ages.]
> (De retardatione 19)

Earlier in his discussion of the causes of old age, Bacon cites two reasons for an increase in damaging extraneous moisture. Ingestion of unsuitable foods occasions a superfluity of noxious humours, as does inefficient digestion resulting from diminished innate heat (De retardatione 9-10). He repeats his opinion when discussing the origins of grey hair:

> Sed hic humor putridus generatur multis modis. Vnus est ex vsu quarundam rerum que humorem putridum inducentem caniciem generant. . . .
> Alius est ex debilitate caloris naturalis que existit in corpore ex habundantia frigoris, ut dicit Aristoteles in fine libri de Animalibus.
> [But this putrid humour is generated in many ways. The first is through the use of those things which induce putrid humours which generate grey hairs. . . .
> The other is through a debilitation of the natural heat which exists in the body and an abundance of cold, as Aristotle says at the end of his book on Animals.] (De retardatione 19)

Bacon's advice to those who wish to retard or reverse advancing greyness involves dietary instructions in order to minimize production of harmful humours, as well as recipes for potions which will replace white hair with black through the reintroduction of heat and moisture (De retardatione 57-58).[10] Moreover, he counsels those wishing to retain their youthful hair colour to go hatless, for head-coverings increase the likelihood of "mouldy" hair:

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[10] Book II of Avicenna's Canon lists the degree of moisture, dryness, heat and cold of many common foodstuffs (Gen. Prin. 429-36).

> Item dicit Aristoteles in loco supradicto quod pili cooperti citius canescunt quam discooperti: nam coopertum prohibet ventum, et ventus prohibit putrefactionem.
> [Therefore Aristotle says in the place quoted above that uncovered hair quickly turns grey when it is covered, because covering prohibits the movement of air, and air prohibits putrefaction.]
> (De retardatione 19-20)[11]

All of these injunctions and prohibitions originate in a concept linking aging with the deterioration observed in mould and mildew. Natural colour disappears when any organic entity decays into mouldy greyness, the process progressing more quickly by covering the object so that fresh air cannot circulate.

Once again, the encyclopedias follow the physicians in explaining greyness as a putrefaction of the hair due to extraneous moisture and a lack of vital heat. Vincent cites both Aristole and Avicenna in his discussion of grey hair and its remedies, reiterating the conventional belief that this accident of old age stems from humoural imbalances:

> Canicies autem naturalis est propter debilitatem caloris quit exit à corpore, & abundantiam frigoris. Nam senectus infrigidat & corpus dessicat. Vapor autem vel cibus terrestris, qui est causa & origo villis, quando non bene digeritur, putrifit ex calore aeris continentis, & ex illo generantur cani.
> [Greyness therefore is natural because of the debilitation of natural heat which exits from the body, and an abundance of cold because the body cools and dries in old age. For the vapor or the foods full of earthy humours which are the cause and origin of hair when they are not well digested

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[11] Aristotle states: "Canescere pilos ocyus opertas **quam** detectos, difflatosque aduertimus" [Hair is more likely to turn grey when it is covered than when exposed to the wind] (De hist. an. 26v; bk. III, ch. 11).

> putrify because of the heat of the surrounding air and from them grey hair is generated.]
> (Spec. 2363; bk. XXXI, ch. C)

Quoting Constantinus Africanus, Bartholomaeus explains how hair becomes constituted from the bodily humours:

> And Constanyn seiþ þat heed heer comeþ of þicke and grete fumosite and hote, and þat fumosite comeþ of fire and kynlinge of humours, and passith out at pores of þe heed, and is idryed wiþ aier þat is wiþoute, and so iturned into substaunce of heer. While þis humour growiþ, heer growith þat is ibred and comeþ þerof and is inorischid þerwiþ. Who þat lesiþ þis fumosite lesiþ also þe heer of þe heed. Also þe heer haþ þe qualite of þis fumosite, for if þis fumosite is blacke þe heer is blake, and moche heer if þe fumosite is moche, and scaars heer if it is scars. (Trevisa 1. 289)

While intense natural heat causes abundant smoky humours to create and nourish it, the hair retains its youthful colour. But as the innate heat begins to fail, the black, oily smoke from the fire of life becomes thinner and greyer, a change in bodily constitution reflected in the hair:

> But of hoornes heer take heed: as Constantinus and oþer auctoures tellen, hoornesse comeþ of passynge coolde of þe humour þat fediþ and norischiþ þe heer, for maistrie of colde flewme and moist brediþ hoornes. For of a white fumosite and cold comeþ hoornes of hed heer and of oþir heer of þe bodye. (Trevisa 1. 289)

Bartholomaeus's "white fumosite" recalls Aristotle's mould and Avicenna's "white mustiness," all referring to the mildew-like decay proceeding from inefficient combustion of the fire of life. Like Aristotle's poets who correctly use medical lore to create a metaphor of old age, Chaucer encompasses these theories in the brief image of the Reeve's "mowled" hairs, evidence of his physical decline.

3. The Mouldy Heart

According to the Reeve's lament, not only his hair but also his heart has become mouldy in the course of his long life, a metaphor recalling once again Aristotle's aphorism, "senectus aut non nisi quedam putredo est" [for old age is nothing but putrefaction] (Prob. 98r; bk. XXXVIII, qu. 9). Greyness, associated with mould and mildew links the aged heart with the hoary head and with the ashes which the Reeve mentions slightly later in his prologue: "Yet in oure asshen olde is fyr yreke" (RvPro 77; I.3882). The aging process resembles the decline into mouldiness observed regularly in the plant world. In fact, in order to delay aging, Aristotle advises living in an "airy region" which inhibits mildew by good ventilation:

> Cur qui loca edita, apertaque colunt, tardius senescunt: qui autem caua & palustria ocyus? An senectus quaedam putredo est: putret autem, quid quiescit, nullo modo, aut minus ita afficitur quod mouetur, vt aqua, perfluens & conclusa, igitur vt locis editis aer vndique afflante spiritu agitatur, ita cauis manet immotus.
> [Why is it that those who live in high, airy regions grow old quite slowly, but those who live in hollow and marshy districts age rather quickly? Is it because old age is a kind of putrefaction, and that which is at rest putrifies but that which is in motion is either quite free from or at any rate less liable to putrefaction, as we see in water which is flowing and that which is stagnant? Thus in high regions because of the blowing of the winds, the air is everywhere in motion, but in hollow areas it remains still.]
> (Prob. 45r-45v; bk. XIV, qu. 7)

As organic material matures, dessicates and decays, so fire decomposes into ashes. The fire of life literally burns itself into embers over the years. Likening innate heat to a flame which must be carefully preserved so that it does not blaze out in an intense and unregulated burst of heat, Aristotle explains that in old age, "paucum est calidum, velut plurimo euaporato in multitudine vitæ" [the innate heat is small because most of it has evaporated in the length of life] (De iuuentute 158r; ch. 14). What remains must be carefully conserved so that it is neither extinguished through lack of fuel nor exhausted through lack of cooling. He compares this stewardship to banking a fire with its own ashes:

> Occulatio autem feruat ignem neque enim respirare prohibetur propter raritatem cineris, & obstat ei qui in circuitu aeri, ne extinguatur, copia existentis in seipso caliditatis.
> [It is seen, therefore, that banking up a fire also keeps it (the heat contained in the coals) in, for the ashes, being porous, do not prevent the circulation of air, and again they enable it to resist extinction by the surrounding air by means of the supply of heat which it possesses.]
> (De iuuentute 151r; ch. 3)

The close connection between the greyness of ashes and that of mould appears in Bartholomaeus's discussion of the positive and negative aspects of heat. He notes that while heat forms the source of existence, its intensity can also lead to the greyness of ash, or putrefaction:

> Also oþerwhile he[te] distroyeþ, as it happiþ whan he deleþ more than he wastiþ. Þan þe humour roteþ and is corrupt, as it fareþ in wete hupel of whete; þe hete iclosid þerinne dissolueþ and todeliþ þe water into smoke, and þe smoke ihold and iclosid þerinne nesscheþ þe greynes and makeþ rotye and corrumpiþ hem. (Trevisa 1. 131)

Similar to Aristotle's description of the banked fire, Bartholomaeus's example of spontaneous combustion emphasizes the connection between the rottenness of mould and the greyness of ashes. Although this relationship may appear uncongenial to modern understanding, the explanation of death and decay in the Middle Ages merged the two concepts. Chaucer exploits this conjunction in the image of white "mowled" hair which is transformed into a metaphor involving the putrefaction of mould and linked finally with the ash-banked fire in the heart.

4. Rotten Before Ripe

Putrefaction figures once again in the Reeve's self-assessment when with bitter vulgarity he compares himself to the medlar fruit: "I fare as dooth an open-ers" (RvPro 77; I.3871). A type of small apple, the medlar characteristically forms a cleft and a blemish-like indentation on one side, a configuration which fosters its lewd identification with the buttocks. That the Reeve chooses to call this familar fruit by its impolite common name prepares his audience for the cynical obscenity of the tale he will tell, but more important to the pattern established in "The Reeve's Prologue" is the understanding that, although the medlar ripens early, it remains virtually inedible unless stored until it softens almost to the point of rottenness. Reiterating Aristotle's dictum that old age is nothing but decay, the Reeve laments, "Till we be roten, kan we nat be rype" (RvPro 77; I.3875). With a sneer at conventional platitudes which attribute the ripeness of experience to the elderly, the Reeve cynically affirms that whereas ripeness may be all, it comes at a great price. Just as the medlar is unfit for consumption until it starts to rot, so a man cannot claim "ripeness" until decay is apparent.

As a metaphor for old age, the medlar particularly suits because it not only reflects medical assumptions linking aging to progressive decay, but because its medicinal properties also parallel the constitution of the elderly. In his listing of the qualities of various foods, Avicenna labels the medlar cold and dry in the first degree (Gen. Prin. 433), an identification repeated by all of the authorities quoted in the Speculum. For example, Vincent cites Isaac Judæicus in stating that: "Mesphile frigida sunt & sicca in primo gradu" [The medlar is cold and dry in the first degree] (Spec. 1042; bk. XIV, ch. XLIII). As such, it provides a useful medicine against the heat of fever in that its cold dry humours counteract high body temperatures (Levey 94). For similar reasons, both the Regimen sanitatis salernitatem (n. pag.) and the Speculum Naturale (1042; bk. XIV, ch. LIII) attribute to medlars the ability to comfort uneasy digestion by cooling the excessive heat causing the distress. Decaying as it ripens, cold and dry in constitution, the medlar presents a perfect image of the physiology of old age as perceived by medical authorities in the late Middle Ages. Chaucer capitalizes on all of the connotations of this familar fruit, creating a metaphor which demonstrates both artistic integrity and scientific validity.

Ironically, the maturity of age, like the ripeness of the medlar, is tainted by the blight which accompanies it. In mocking self-loathing the Reeve derides elderly pretentions to youth: "We hopen alwey that the world wol pype" (RvPro 77; I.3876). He places the image of frail old men dancing awkwardly to the tune of fleshly delight in pitiable opposition to the usual tableau of young lovers "hopping" in the circle dance of love. Commenting on falling in love, the narrator in A Poem on the Times of Edward II observes, "And whan theih comen to the ring, hoppe if hi kunne" (Political Poems 339. 351). In the long metrical romance of Merlin, the narrator observes that the young woman who eventually succumbs to the devil's seduction first assents to his suggestions of lechery: "And wiste wel be hire answeryng / That sche sholde hoppen uppon his rynge" (Merlin 373-74). Although his "olde lemes mowe wel been unweelde" (RvPro 77; I.3886), the ancient Reeve still longs to join in the "olde daunce" (GP 31; I. 476). Throughout his lengthy discourse deploring his advanced years, however, he repeatedly calls attention to his sexual inadequacy. He begins his complaint by distancing himself from ribald ways: "But ik am oold; me list nat pley for age" (RvPro 77; I.3867). Alluding to the conventional characterization of elderly men as impotent, the Reeve attributes his amorous inability to his age.

The sexual decline of the elderly figures in most medieval descriptions of elde. In the annunciation play of the York cycle, for example, Joseph accuses his young wife of infidelity when it becomes obvious that she is pregnant:

> Þou art yonge and I am olde,
> Slike werkis yf I do walde,
> Þase games fra me are gane. (122. 194-96)

In a similar scene, the Chester nativity play depicts the doddering Joseph as incapable of fathering the expected child:

> Well I wist an ould man and a maye
> might not accord by noe waye.
> For many yeares might I not pleye
> Ne worke noe workes wild.
> (1. 102; play VI, 125-28)

More pointedly, the old speaker of an anonymous fourteenth-century lyric laments the evils of old age, complaining "myn gomenes waxeþ gelde" (Harley Lyrics 47). Likewise, in Passus XX of Langland's famous Vision, Old Age attacks Will the dreamer, rendering him useless in the conjugal bed:

> And of the wo that I was inne, my wif hadde ruthe,
> And wisshed wel witterly that I were in hevene.
> For the lyme that she loved me fore, and leef was
> to feele--
> On nyghtes, namely, whan we naked weere--
> I ne myghte in no manere maken it at hir wille
> So Elde and he[o] hadden it forbeten.
> (257. 193-96)

Significantly, the blame for Will's disability falls only partially on Elde; his wife too must accept some responsibility, in that the heat and moisture dissipated during sexual activity exacerbates the refrigeration and dessication concurrent with old age.

Medically, both Will and the Reeve suffer from the same condition in which advanced years conspire with a vigorous sexual history to produce impotence. The dissatisfaction with his present disability expressed by Will's wife argues for his previous vitality. Similarly, Oswald confesses to having always had a "coltes tooth" (RvPro 78; I.3888), his continued interest in sexual matters demonstrating an active past. In the elderly, however, bodily fluids including semen dry up because of the general depletion of natural moisture and the insufficiency of the natural heat to renew the blood supply. Arguing that semen cannot be a waste product or an excretion like superfluous phlegm, Aristotle reasons that in the sick and the elderly noble fluids such as semen and blood are depleted while extraneous moisture becomes more abundant:

> Quod quidem itaque talis superfluitas non utique erit, manifestum: pessime enim dispositis propter etatem aut infirmitatem aut habitum plurimum inexistet tale, sperma autem minime: aut enim omnino non habent, aut non prolificum propter misceri inutilem superfluitatem et languorosam. [Now it is evident that semen cannot be of the former character (i.e., a useless secretion), for such is most abundant in those in the worst condition because of age or infirmity; semen on the contrary is least abundant in them, for either they have none at all, or it is not fertile because it is a superfluous mixture, useless and feeble.] (De gen. an. 26; bk. I, ch. 18)

Because innate heat diminishes in old age, food is not concocted properly in any of the digestive processes. Semen, produced in the final most refined digestive phase, requires considerable heat in its manufacture; it cannot be secreted if this warmth is lacking. Aristotle states that the elderly find the generation of sperm difficult, if not impossible:

> Adhuc non inesistit sperma neque in prima etate neque in senectute neque in infirmitatibus, in

> infirmari quidem propter impotentiam, in senectute autem propter non digere quod sufficiens secundum naturam, iuvenibus autem existentibus propter augmentationem: prevenit enim consumptum omne. [Moreover, semen does not exist in men either in childhood or in old age or in sickness, in the infirm because of weakness, in the elderly because they do not digest sufficient nutrient as they should, and in childhood because their growth uses up all their nutrients.]
> (De gen. an. 27; bk. I, ch. 18)

Galen explains and expands upon Aristotle's belief that semen constitutes the last and most noble secretion of the nutrients taken into the body.[12] Like all bodily humours, semen begins as food which has been transformed into blood, but only the purest and most refined products of the first two digestions become sperm. The purified blood undergoes a process in the testicles which changes it into pure white liquid semen:

> Vena enim superjacet, subjacet autem arteria, utraque flexus multos numero aequales efficiens instar capreolorum quorumdam varie implexorum; quo implexu sanguis et spiritus, qui ad testes feruntur, diutissime coquunter; clareque cernas humorem, qui in primis flexibus habetur, adhuc sanguineum, in sequentibus deinceps magis magisque albescere, quoad in omnium postremis totus albus omnino fuerit redditus qui flexus postremi in testes terminantur.
> [The vein lies on the top and the artery underneath, and both make the same large number of coils like the intertwined tendrils of vines. Because of this interweaving, the blood and pneuma which pass to the testes are concocted for a long time and you may clearly see that the humour contained in the first coils is blood and that in the following ones it gets whiter and whiter until in the very last ones that end in the testicles it is completely white.]
> (De usu 184; bk. XIV, ch. X)

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[12] See De gen. an. 29; bk. I ch. 19.

The testicles then concoct the partially refined semen thoroughly, perfecting its reproductive capabilities.

According to late medieval physiology, veins carry blood from the seat of concoction in the heart to the various parts of the body. Arteries, on the other hand, provide a conduit for the airy life-force, the _spiritus_ or _pneuma_.[13] Necessitating a commingling of the two which is effected in the spermatic vessels, the production of semen demands considerable innate heat as well as a plenitude of pure blood. However, age severely diminishes the supply of both these necessities, greatly inhibiting the formation of semen. Moreover, if the body concocts blood into seminal fluid, the potential nutrients of that pure sanguineous humour are lost to the creature. This scarcity becomes serious in the elderly, whose already impaired digestion cannot be efficient because of the dearth of natural heat. Any further diminution of nutrition carries with it the threat of death itself.

Even healthy young men are cautioned against excessive coitus because the manufacture of semen requires so much physiological effort from the organism. Aristotle observes that the production and emission of sperm leads to both dessication and debility in that it appropriates nutrients from the body as a whole. Deleterious by its very definition, coitus may not be entirely harmful only for young men possessed of an intensely warm and moist constitution:

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[13] See my discussion in Chapter 4 of _spiritus_ and its role in sexuality.

> . . . modicissimo enim abscedente hoc fit dissolutio manifesta, tamquam sint privata corpora eo quod ex alimento facto fine. Paucis autem aliquibus aut in enim modico tempore etatis alleviat aliquando abscendens . . . et enim hoc abscedente corpora felicitantur magis. [. . . the loss of a very little of this (i.e., semen) causes a visible weakness because especially by this the body is deprived of that which is finally made from food. With some few men in their prime the loss at any time is an alleviation . . . and this loss benefits the body greatly.] (De gen. an. 27; bk. I, ch. 18)

In the questions dealing with matters of sexuality, Aristotle questions: "Quare qui concumbant, resolui, atque languere magne ex parte solent?" [Why do those who have sexual intercourse usually become languid and weaker?] (Prob. 18r; bk. IV, qu. 22). Comprised of two parts, the answer claims that semen derives from the entire body, and that so much nourishment is used up in the production of sperm that the body becomes temporarily debilitated by its loss. Another question inquires, "Cur res venerea ventrem refrigerat & siccat?" [Why does sexual intercourse cool and dry the stomach?] (Prob. 18r; bk. IV, qu. 17). Responding that heat is expelled in coition, the author reasons that in addition to the drying effect of emission, the generated heat evaporates natural moisture which disperses as the body cools. Because the first stage of digestion occurs in the stomach, and because proper concoction requires intense innate heat, cooling this area cannot possibly benefit the body.

The physiology of the elderly particularly proscribes sexual activity because it depletes the scanty supply of heat and moisture remaining. Constantinus explains that, because of its cooling and drying properties, too-frequent intercourse leads to premature death:

> We say then, that when semen is emitted the humour lost by the body is a substantial one, drawing its essence from the vital organs; it is not like the humour lost by excretion, because this latter is incidental and, being superfluous, is cast off by the organs. (De coitu 61)

Intercourse is therapeutic in moderation because it purges the body of superfluities which if pent up can produce melancholia or mania, but it harms the weak and elderly who already possess constitutions too cold and dry for long survival. Constantinus comments, "Galen shows that when any animal has intercourse too often it soon dies, but will live longer than usual if it has intercourse rarely" (De coitu 61). Maimonides concurs. Speaking of intercourse, he advises, "its harm to young men whose bodies are moist is little, and in the case of old people or convalescents or those of a dry constitution, the impairment of health is extensive" (Preservation of Youth 81).

Although desire may remain undiminished, nature protects the elderly by eliminating the ability to emit semen and severely hindering even the ability to achieve an erection. Constantinus comments that some men cannot emit semen because they have had intercourse too often (De coitu 56). Alluding to this inability, Chaucer's Parson scathingly denounces old men still obsessed by carnal pleasures. He condemns "olde dotardes" who "kisse though they may not do," comparing them to dogs, "for an hound whan he comth by the roser or by othere [bushes], though he may nat pisse, yet wole he heve up his leg and make a coutenaunce to pisse" (ParsT 318; X.857). With a vulgarity which expresses his contempt for those who forsake spiritual ideals in their declining years, the Parson graphically describes the infertile erection which, according to medical teaching, accompanies old age.

5. Medicine and Physiognomy

Oswald's lustful nature as revealed in his prologue and tale comes as no surprise, for the physiognomy of the "sclendre colerik" (GP 32; I.587) Reeve described in "The General Prologue" suggests a man not unacquainted with bodily delights. Because of the natural hotness of his constitution, the choleric man produces a great deal of semen which must be expelled regularly to maintain health. In his commentary on Constantinus's Viaticum, Peter of Spain links stimulation to intercourse with lovesickness, observing:

> huiusmodi stimulacio maxime habet esse in complexionibus calidis--in colericis et sanguineis. Et causa huius est quia in colericus et sanguineis est calor stimulans ad coitum et iterum in eis est sufficiens meteria spermatica replens testiculos, cuius repletio stimulat ad coitum.
> [this kind of stimulation occurs most in hot complexions--in the choleric and the sanguine. And the reason for it is that in the choleric and the sanguine there is a heat that stimulates intercourse, and moreover in them there is

> sufficient seminal matter filling the testicles, whose fullness stimulates intercourse.]
> (Wack 220)

The Reeve's choleric constitution obviously explains his quickness to anger, a character trait intensified by the physiology of aging. Commonly attributed to the elderly,[14] anger becomes exacerbated in old age by the noxious vapours produced in impaired digestion. Having listed "ira et inquietatio animi" [wrath and disquietude of spirit] (De retardatione 18) in his catalogue of the accidents of old age, Bacon explains that these originate "ex fumis melancolicis ascendentibus ad cerebrum" [from melancholic vapours ascending to the brain] (De retardatione 25). These fumes, created by putrid humours in the elderly, occasion wrathful attitudes as well as grey hairs. The onset of old age merely intensifies the character trait in a naturally choleric disposition which already inclines to anger. The Reeve's humoural imbalance may explain why all his subordinates are "adrad of hym as of the deeth" (GP 33; I.605), and why his vindictive tale aims to "quite / With bleryng of a proud milleres ye" (RvPro 77; I.3865), but it also subtly suggests his licentious disposition. In his pioneering work on the influence of medieval scientific thought on The Canterbury Tales, W. C. Curry quotes from the Middle English Secreta Secretorum to describe the Reeve:

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[14] See, for example, the list of the miseries attendant upon age in Innocent's De Miseria Condicionis Humanae: "Senex facile provocatur et difficile revocatur" [An old man is provoked easily and restrained with difficulty] (108).

"one of the chief characteristics of the 'cholerik' man is that he is 'Desyrous of the company of women moore than hym nedyth'" (Curry 72). Moreover, he states that the Reeve's thin legs recall Artistotle's Physignomy: "whoever has thin, sinewy legs is luxurious or voluptuous by nature" (Curry 75). But Curry does not trace these statements to their medical sources. According to the doctors of Chaucer's time, the lust of the choleric and the thin legs of the sexually active both find their origins in human physiology.

Most medical practitioners in the late medieval period agree that, while too much intercourse is harmful, so is the retention of sperm, leading to putrefaction which can cause mental illnesses. While moderate intercourse, balancing the two evils against one another, suffices for most individuals, the very hot blooded must consort with women frequently in order to maintain a bodily equilibrium. Constantinus's authoritative statement on human sexuality advises that "no one who abstains from intercourse will be healthy" but warns that its beneficial qualities predominate when "the intercourse is not frequent but only performed when necessary" (De coitu 59-60).

Maimonides similarly observes:

> It is not surprising that he who indulges excessively in sexual intercourse becomes weak because the entire body empties itself of pneuma and liquids. Added to this comes a pleasurable sensation which by itself can cause the cessation and weakening of life's strength. There are many in whom a sudden strong and strenuous pleasure leads to death. (Aphorisms 1. 140)

Slightly later he cautions that, according to Galen, those who indulge in sexual intercourse fall prey to coldness, lethargy and even dementia if prevented from amorous activity. He explains that, "all of this occurs secondary to the putrefaction of the retained semen because it causes vapour to ascend [to the brain]" (Aphorisms 1. 196). Debilitated if he engages in coitus and threatened by mental deterioration if he does not, the choleric man clearly participates in a destructive circle which renders him old before his time.

The Reeve's thin legs are closely related to his sexual intemperance, serving as evidence of his lustful life. Curry merely points out that thin legs betoken excessive sexuality, but Aristotle's medical theories provide the explanation. In spite of the apparently deterministic pronouncement found in various handbooks of physiognomy, from a medical viewpoint thin-legged individuals are not somehow magically destined to be lascivious; those who engage in frequent coitus develop thin legs because of the physical effort required. Aristotle observes: "in applicatione contractio fit skeleorum: organum enim nervosum et natura skeleorum nervosa" [in intercourse the legs are contracted, the male organ being sinewy and the legs being sinewy by nature] (De gen. an. 9; bk. I, ch. 5). Constantly straining the legs results in a wasting away of the flesh. The Problems question:

> Cur iis qui rem veneream immodice agunt, oculi, & clunes manifeste subsident, partes quarum alteræ prope, alteræ procul à genitalibus absunt?

> [Why do the eyes and flanks of those who indulge too frequently in sexual intercourse sink noticeably, even though the flanks are close to the genitals and the eyes are distant from them?
> (Prob. 16r; bk. IV, qu. 2)

In answer to this question, Aristotle concentrates on the role which the legs play in sexual activity. Cooperating very significantly in the act of intercourse, the legs contract as semen is emitted. Also, a great amount of moisture is drawn from the legs in the production of sperm because they move during copulation, and, finally, the mere passage of semen through these parts close to the organs of generation is sufficient to make them lean. He observes further that the legs of eunuchs swell because of their inability to ejaculate (Prob. 16v; bk. I, qu. 3).

In his first description of the Reeve, Chaucer deliberately connects Oswald's slender build to his choleric constitution, focussing particularly on his long, lean legs. While Douglas Wurtele's injunction to beware of simplistic readings of physical description may serve as a corrective to what he terms "quasi-deterministic judgments" (140), medical evidence providing a foundation for the physiognomies strongly reinforces the Reeve's licentiousness as revealed in his prologue and tale. Wurtele suggests that Oswald's thin shanks "need signify nothing but an advanced stage of decrepitude; if unshrunken in his lecherous youth they would not then have necessarily condemned him even when the vice was actual, not merely nostalgic" (136). But Wurtele succumbs here to the same error of determinism committed by those who interpret thin legs as necessitating lustfulness. Medical theory clearly indicates that such emaciation proceeds from sexual excess; it does not cause the character defect. An understanding of the medical basis behind the details of description forges strong links with the portrait of the salacious individual presented in "The Reeve's Prologue." His lifetime of intemperance, declared by his very anatomy, feeds the frustration evident in his complaint that "for thogh oure myght be goon, / Oure wyl desireth folie evere in oon" (RvPro 77; I.3879-80).

The Reeve perceives himself as an old man, impotent but vexed by desire. Sexual imagery pervades his prologue, so that even the striking figure of the cask of life induces the reader to view it, in Carol Heffernan's words, as "patently phallic." Describing the obscenity of the image, Heffernan shows how the "streem of lyf" (RvPro 78; I.3895), the seminal humour, flowed plenteously from puberty through adulthood until reduced to a trickle in old age (41).[15] Although Heffernan does not make the connection, this interpretation is fully consistent with the medical view of the sexual ability of the aged. The body cannot produce semen in unlimited quantities because the amount of radical moisture available to any individual is determined at birth, and innate heat, necessary to seminal concoction, diminishes with age. Moreover, excessive sexual activity exacerbates the natural dryness concomitant with aging. Aristotle explains that life depends on an abundance of warm natural moisture which can be depleted by the dessication attendant upon sperm production: "Quapropter salacia, & multi seminis senescunt cito" [For this reason salacious (animals) and those which produce much semen grow old quickly] (De long. vitæ 146; ch. 3).

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[15] See also MacLaine 129-31.

Roger Bacon agrees with the traditional belief that bodily fluids diminish with age. Listing the symptoms of old age, he places a decrease in physical strength and virility with a diminution of blood and spiritus:

> Accidentia senectutis et senii sunt hec: canicies, palliditas et cutis corrugatio, debilitas virtutis et virium, diminutio sanguis et spiritum. . . . [The accidents of elderliness and old age are are these: grey hair, pale and wrinkled skin, a lessening of strength and ability, a diminution of blood and spirits (spiritus). . . .]
> (De retardatione 18)

He warns, "Sed coitus plurimus et flebotomia plurima et hoc faciunt per viam dissolutionis naturalis humiditatis" [But excessive intercourse and blood-letting create a dissolution of the natural moisture] (De retardatione 46). Old age brings with it a general dessication which impairs the ability to produce semen. Chaucer merges these two medical tenets into one arresting image of the emptying cask. As Heffernan observes, the "ridiculously functionless" (41) phallus changes from the virile conveyance of the stream of life to the foolish tongue which can merely recall old conquests: "For whan we may nat doon, than wol we speke" (RvPro 78; I.3881).

Old conquests figure in the description of the Reeve in "The General Prologue" as well. Although Muriel Bowden dismisses the "rusty blade" (GP 33; I.618) which hangs impotently at his side as a mere representation of the Reeve's inferior social status (253), Brooks Forehand argues convincingly that it symbolizes his lost youth (984). The rust indicates that the usefulness of the weapon, like the brightness of youth, is past. However, Forehand does not specifically connect the phallic weapon with Oswald's declining virility. Yet within the context of Chaucer's portrait of the old lecher, an obscene interpretation becomes entirely probable. The elderly carpenter cannot "pley" because of his age; elsewhere in his writings, Chaucer admits himself to the same fraternity. In _Lenvoy de Chaucer a Scogan_, the sleeping sword ostensibly represents the poet's muse, but on a more ribald level alludes to youthful amorous adventures:

> Ne thynke I never of slep to wake my muse,
> That rusteth in my shethe stille in pees.
> While I was yong, I put her forth in prees;
> But al shal passe that men prose or ryme;
> Take every man hys turn, as for his tyme.
> (655. 38-42)

Playfully castigating his aging contemporary for scorning the dictates of the Goddess of Love, Chaucer suggests that "alle hem that ben hoor and rounde of shap" (655. 32) will participate in his punishment. He immediately disqualifies himself with the disclaimer that his "muse" has been dormant in the sheath for some time. In the context of the poem, the phallic connotations of the image become inescapable.

The bawdy relationship between the sword and the virile member provides the humour in a fifteenth-century lyric:

> At the northe end of seluer whyte,
>   my lef me bat--
> at the northe ende [of seluer whyte,]
>   [my lef me bat] I scholde abyde.
> I leyde my ware, a bogeler brode,
>   and euer he smote--
> I leyde my ware, a bogeler brode,
>   & euer he smote by side.
> shalle ther neuer man iust ther-at,
>   but ȝyf he can--
> shalle ther neuer man iust ther-at
>   but yf he can hyt smyte.   (Robbins 26)

Providing a "bogeler brode" for her lover's thrusts, the lady draws a parallel between martial ability and vigorous lovemaking. Sexual innuendo similarly informs January's erroneous belief that "A man may do no synne with his wyf, / Ne hurte hymselven with his owene knyf" (MerT 161; IV.1839-40). His salacious enthusiasm for the bridal night leaves little doubt as the the equation of knife and penis. Chaucer's Parson preaching against sexual immorality draws a similar comparison:

> And for that many man weneth that he may nat synne for no likerousnesse that he dooth with his wyf, certes, that opinion is fals. God woot, a man may sleen hymself with his owene knyf, and make himselve dronken of his owene tonne.
> (ParsT 318; X.858)

The Parson provides a gloss on January's intemperate lust by invoking proverbial wisdom which equates the damaging capabilities of the weapon to the deleterious consequences of immoderate sexuality (Andrew 273-77). Both Oswald's reminiscence of his "coltes tooth" and his lament over the loss of sexual vigour create a context in which his "rusty blade" invites more than superficial attention. This apparently innocuous detail provides another in a series of strong links between the evaluation of the Reeve provided in "The General Prologue" and Oswald's own revelation of character. Medical theories of senescence substantiate the symbolic reading established in the text itself.

Medieval conceptions of the process of aging inform "The Reeve's Prologue" by explaining the focus upon dryness and mould, upon sexual inadequacy and physical changes due to sexual excess. Undergirded by medical teachings, the images of senility merge with one another, providing a scientifically correct assessment of the Reeve's constitution as well as linking his character as revealed in the prologue to his tale with his description in "The General Prologue."

CHAPTER 2

"PARADYS OR HELLE": PLEASURE IN "THE MERCHANT'S TALE"

May's declaration of innocence following her adulterous tryst with Damian constitutes only one of the deceptions which contribute to the humour of "The Merchant's Tale." As Milton Miller persuasively argues in his article on January's heir, May first deludes January into believing that she is pregnant with his child by requesting pears out of season. According to Miller, May's ruse later becomes a reality when her arboreal exploits produce the heir so desired by the old knight (439). Drawing upon the tradition of the old cuckold married to a young wife, the tale concludes by ironically linking the aged January with the attentive Joseph of medieval drama (Bleeth 63).[1] Afflicted like January with spiritual if not physical blindness, through divine revelation Joseph overcomes his mistrust of his young wife in celebration of the impending incarnation. January, on the other hand, although cured of his physical disability, remains blind to the sordid reality which explains his wife's pregnancy. This final joke implies that, despite his best efforts, January's inheritance will "falle / In straunge hand" (MerT, 156; IV.1439-40).

Scholars have accepted that the imperative tone of pregnancy underlies May's urgent request, noting that the analogues of "The Merchant's Tale" contain no similar element, but they disagree on the fruitfulness of the hasty congress in the pear tree. Identifying Priapus as "a comical figure of frustrated and embarrassed lust" and the allusion to Pyramus and Thisbe as a story of unfulfilled love, Emerson Brown, Jr., calls for a reconsideration of the assumption that Damian and May produce an heir for January ("Hortus Inconclusus" 33). Having suggested that the activities in the pear tree never reach a satisfactory conclusion because January interrupts the lovers before the act can be completed, he comments:

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[1] See also Joseph L. Baird and Lorrayne Y. Baird.

> The Merchant wishes, so it seems, to reduce the gallant lover Damyan to the level of the foolish Priapus caught in the moonlight. The pear tree episode, then, far from representing the triumph of young love over exterior restraints, shows rather the triumph of the Merchant's bitter cynicism over both "courtly" and fabliau morality. (40)

In response, Peter G. Beidler argues that Priapus's embarrassing situation differs markedly from Damian's circumstances:

> Priapus wished to ravish an unwilling maiden; Damian's May is neither a maiden nor unwilling--indeed far from being raped, she herself arranges the arboreal meeting with Damian. Priapus' encounter takes place on the ground and at night, Damian's in a tree on a bright and clear morning. Priapus is discovered by many people before he even begins to sexually enjoy Lotis, and is laughed at by them; Damian is discovered by only _one_ person, who does _not_ laugh at him, and that _after_ he has begun the sexual act with May. ("Climax" 39)

Beidler also demonstrates that the parallels between the tragic story of Pyramus and Thisbe and the adulterous lust of May and Damian do not substantiate Brown's contention that the allusion recalls frustrated love:

> Damian and May are different in character and situation from Pyramus and Thisbe, and act out their roles in a much different plot. There seems little reason to suppose that Chaucer's allusion conveys any special information about their sexual encounter. (39)

Beidler admits, however, that Brown's article forces scholars to re-examine their assumptions about the climactic meeting in the pear tree. Observing that "only Damian knows whether he finished, and he is not talking" (42), Beidler cautions that in assuming that Damian impregnates May, critics, like January, may be seeing what they want to see.

Damian may not be talking, but the medieval medical authorities are, and their theories substantiate Miller's original reading of the tale by answering some of Beidler's reservations about the sexual action. Medical teachings about the cravings of pregnant women and the medicinal properties of pears in treating the nausea associated with pregnancy intensify the suggestiveness of May's request. Yet the widely held doctrine of dual semination which insists on the necessity of female orgasm to procreation renders May's pregnancy at this point in the tale impossible. The text clearly indicates that she has experienced no delight in the embrace of her aged husband. Her implicit claim that she carries January's heir motivates the plot in allowing her access to the pear tree, but it also sets the stage for her actual pregnancy at the conclusion of the tale. The imagery of fecund spring time as well as that of malleable wax are both employed in the medical writings which point to reproductive activity. An investigation of the medical lore pertaining to human procreation supports the opinion that the ultimate deception in "The Merchant's Tale" involves the disposition of January's inheritance and the illegitimacy of his heirs.

1. Pears and Pregnancy

According to theories current in the Middle Ages, May's request for some of the "smale peres green" (MerT 167; IV.2333) from the pear tree in January's garden sends an unmistakable message that she is pregnant with his heir. If her declaration does not convince him--"a womman in my plit / May han to fruyt so greet an appetit / That she may dyen but she of it have" (MerT 167; IV.2335-37)--the pharmacology of the period substantiates her claim. In uttering her longing for unripe fruit, May primarily refers to the pica of pregnancy, the desire of pregnant women for strange or unpalatable foods. Pica is a condition recognized and well documented in the medical writings available to physicians of the Middle Ages. For example, in his section dealing with the discomforts of pregnancy, the Greek gynaecologist Soranus defines the strange desires experienced by pregnant women:

> Cissa est appetetio inconsueti cibi tempore quodam mulieribus [gravidis] occurens cum inequalitate stomachi et habundantia humoris et nausea. ["Cissa" (sharpness?) is the appetite for strange food at the time when a woman is pregnant, occurring because of the unbalanced nature of the stomach and causing excessive humours and nausea.] (22)

Describing the symptoms of this syndrome, Soranus specifically mentions a craving for green fruit:

> Sequitur autem eas que cissam patiuntur nausea, fastidium aliquando omnium, aliquando certarum rerum, tunc etiam insuetorum dilectio, ut carbonum comedendorum, vel pomorum immaturo tempore messorum. . . .
> [It follows that those who suffer from the nausea associated with strange appetites sometimes avoid all foods, sometimes certain things, sometimes they eat strange things such as carbon or unripe fruit harvested early. . . .] (23)

Explaining that women who retain "bad liquids" at conception crave "sour and pungent things," Maimonides reassures his readers that this aberration occurs mostly "during the first three months [of pregnancy] and afterwards subsides in the fourth" (Aphorisms 1: 23). Similarly referring to the strange appetites of pregnant women, Bartholomaeus Anglicus advises that "Aristotle seiþ, and Galien also super Amphorismorum, þat is a token þat womman goþ [with] childe ȝif a desireþ diuers þinges . . ." (Trevisa 1: 303).

More than a whimsical desire for a strange food, however, May's request reflects the particular medicinal function assigned to the pear by medical formularies and herbals. Prescribed as a stomachic to allay sensations of nausea, pears rank highly in the foods suitable for pregnant women. Having cautioned that juicy fruits suit only the bilious temperament, Avicenna identifies the properties of the pear as cold and dry (Gen. Prin. 317). Useful in countering the hot humours created in vomiting, pears figure in the list of recommended foods for early pregnancy (Canon

290v; bk. III, fen XXI, trac. II). Soranus similarly prescribes the pear as effective against stomach distress ocurring in pregnancy:

> danda etiam pira . . . tunc uve fabriles. . . . hinc denique cuncta que ordinabimus nichil ingerunt gravaminis. omne enim quod fuerit curiose conditum vel varia suavitate confectum aut digestionem tardat aut corruptum evomitur. [They must be given pears . . . then raisins. . . . Finally, the result of administering all that we describe is that the pregnant woman is not adversely affected. All these things prepared in this strange way with various sweeteners will either slow the digestion or cause corrupt humours to be vomited.] (25)

The _Herbal_ of Rufinus, a compendium of botanical information drawn from Greek and Latin sources, likewise labels the pear as cold and dry in constitution. Citing Platearius's _De simplici medicina . . . dictus Circa instans_, Rufinus provides a condensation of medical thought on the healing properties of the pear:

> _Pira_: frigide et sicce complexionis sunt. Alia sunt domestica que minus sunt frigida; alia silvestria que frigidora sunt. Matura minus stiptica, inmatura magis sunt stiptica. Pira cruda vel cocta (comesta) post cibum alia conprimunt cibaria et sic conpetenter evacuat superflua. Ante cibum sumpta sistunt et constringunt ventrum. Pira cocta in aqua pluviali posita super os stomachi vomitum ex colera debili cohercent; super os pectinem, fluxus ventris stringunt.
> [Pears: they are cold and dry in complexion; the domestic variety is less cold, the wild more so. Ripe pears are less drying, unripe are greatly drying. Cooked or raw pears eaten after a meal compress the other foods (for easy digestion) and effectively evacuate superfluities. Before a meal they remain in the stomach, constricting it. Pears cooked in rain water placed over the mouth of the stomach prevent vomiting due to hot humours; on the chest they prohibit vomiting.]
> (245)

Highly dependent on the Greek herbals, the Arab medical formularies also cite pears as useful against yellow gall (which causes biliousness), as effective against excess phlegm, and as a general "strengthener" of the stomach (Al-Kindi 225; Al-Samarquandi 122-23). This opinion is repeated by Moses Maimonides, who comments, "The pirus, which is the pear, strengthens the stomach" (Aphorisms 2: 79). He suggests the pear's comforting qualities when discussing the treatment of stomach ailments:

> It is difficult to heal weaknesses of the stomach and marked nausea associated with constipation because everything that acts as a laxative causes nausea and produces disharmony of the soul, and everything that strengthens the stomach will hold nature back. The most beneficial therapy [in such cases] is [for the patient] to consume vegetables scented with oil and myrrh. Following this he should take some pears or pomegranates [those] which are most tasty to him. (Aphorisms 1: 180)

The Regimen sanitatis salernintatem, described as the "backbone of of all practical medical literature up to the time of the Renaissance" (Castiglioni 309), agrees that pears act as a restorative, cautioning, however, that they must be cooked before ingestion:

> Si coquas antidotum pira sunt, [sed] cruda venum,
> Cruda grauant stomacum releuant pira cocta grauatum
> Post pira dat potum post pomum vade fecatum.
> [If cooked, they are a remedy, but raw they are poison.
> Raw pears upset the stomach but cooked pears relieve it.
> Give something to drink after eating pears; after eating pears feces are eliminated.]
> (Regimen n.pag.)

In his commentary on these verses, Arnaldus of Villanova observes that pears alleviate stomach pains and effect elimination of bodily wastes. Having paraphrased each verse, Arnaldus invokes the authority of Avicenna in his concluding statements:

> Et secundum Avicenna ii canonis, c. de pomis. Poma dulcia et acetola quandam in stomacho inveniunt humorem grossum quamque deponunt ipsum ingestione. Ratio textus potest esse quia poma multum inflativa sunt ventositatem generantia que in fecessu emittitur.
> [And according to Avicenna's Canon, second book, chapter on pears. Sweet and sour pears create many humours which disperse indigestion. The reason the text states this is that pears are very windy, generating ventosity which is eliminated in defecation.] (Regimen n. pag.)

Similar descriptions of the medicinal properties of various fruits, including pears, occur in the medieval encyclopedias. For example, Bartholomaeus Anglicus explains that nausea can be produced "by pressi[n]ge and reringe of þe stomak by noyous companye of oþir membres whan þey beþ in case igreued, as of þe modir. Ans so ofte spewinge is tokene and a signe þat a womman goþ wiþ childe, as Galien seiþ" (Trevisa 1: 396). He suggests that such a condition can be alleviated by medicinal substances which counter the hot humours operative in the stomach, the pear, for example, providing such relief. Observing that wild and domestic pears differ in the intensity of their medicinal properties, he advises:

> And tame peres green and nouȝt rype beþ soure, grete, and harde, vnsouory [and] e[ue]l to mete, but in sethynge in freissh water wiþ ony oþer wiþ som oþer swete þyng þe erthynesse and þe rownesse þerof may be somdel ytempered, but ȝit þey beth nouȝt acordynge to mete but to medicyne.

Therapeutically, pears "byndeþ and stoppeþ strongliche flux of þe wombe, and stauncheþ colerik spuynge if þey beoþ soden in rennynge water and ylede to the stomak" (Trevisa 2: 1020).

In the Speculum naturale, Vincent of Beauvais cites such authorities as Dioscorides, Avicenna, and Galen in identifying the pear as cold and dry in temperament, characteristics which determine its effectiveness as a comfort for general stomach ailments. Having established that Galen advocates pears for medicinal purposes, "Galenus affirmat pyra ieiunis oblata ventrem constringere, post cibum vero dissoluere" [Galen affirms that pears, given to the young, constrict the stomach; after a meal they loosen it], Vincent provides Avicenna's assessment of their qualities:

> Sunt etiam stomachum præparantia, propriéque scenia stomachum confortant, & abscindunt tussim & choleram sedant. Præterea ventrum constringunt, propriéque illa, quæ exiccata sunt. At verò cholicam euenire faciunt pyra. . . .
> [They also ready the stomach, comfort the area of the stomach, prohibit coughing and settle choler. Besides they constrict the stomach especially because they are very drying. And especially pears disperse colic. . . .]
> (Spec. 1054; bk XIV, ch. LXVII)

Among the paragraphs on maintaining health in pregnancy the Speculum includes a section glossed as "curatio doloris stomachi" [the cure of stomach pains]. Quoting Haly Abbas, Vincent documents some of the discomforts experienced by pregnant women:

> Cum menstrua mulieri tolluntur, accidit ei multorum appetitus incertas, & subuersio, sputaque & vomitus. Dolor etiam in ore stomachi, & paucitas appetitus.
> [When women's menstrual cycles cease, they experience uncertain and strange appetites,

> spewing and vomiting. Also they suffer pain in the mouth of the stomach, and diminished appetite.] (Spec. 2386; bk. XXXI, ch. CXVI)

Included in the list of remedies, pears operate to soothe the nausea:

> . . . pyra, nec tamen multum comedat, sed ter in die paulatim reficiantur, ne stomachus eius grauetur.
> [. . . pears, not eaten too frequently, however, but taken three times a day will restore them so that the stomach is not weighed down.]

Clearly in the Middle Ages the pear held a position of some importance for treating the nausea due to pregnancy. Alluding to its efficacy in this regard, May leads her aged husband to the happy conclusion that she carries his child. But the connotations implicit in the pear do not stop at its ability to alleviate biliousness. Drawing on a literary tradition which links pears with the male genitalia, May indicates exactly the focus of her interest in the pear tree.[2] Perhaps this congruence of meaning owes something to the resemblance testicles bear to the shape of pears. Such a principle appears to operate in medical texts such as the Trotula major which offer advice on increasing potency. In the Middle English version edited by Beryl Rowland under the title The Medieval Woman's Guide to Health, pears are listed with those foods instrumental in increasing sperm production. To prevent suffocation of the uterus, caused by unexpelled female semen, Trotula advises:

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2. See Paul Olsen, "Chaucer's Merchant and January's 'Hevene in Erthe Heere'," for a discussion of the erotic meanings of pears. The Comoedia Lidiae also puns relentlessly on Pirrhus / pirus / pirum (Benson and Andersson 206).

> And beth they war of metes that encresith sede bothe in a man & in a woman, & suche metis ben yelkis of eyren and fressh flessh & namelich of swyne, of cokkes, of sparewys, partryches, quayles and brayne of a bore & þe stones of bestes, as of bores, of boles, of wolves principalliche, and þe mary & the fatnesse and þe brayne of bestes; pyries, dates almaundes, fygges, nuttes, pastinakes, rapys fryed with honye & oyle of benen & pesen & stronge swete wyne. . . . (Guide 95)

Many of the suggestions demonstrate a superstitious correspondence between the actions of the body and the characteristics of the food to be ingested. Pears, dates, figs and nuts exhibit visual resemblance to the testicles, for example, while sparrows earn a place because of their lustfulness and the testicles of wild and domestic animals present obvious choices. D. W. Robertson, Jr. draws attention to the obscene connotations of tree fruit in his discussion of the Wife of Bath's sophistry regarding the instruments of generation:

> C. R. Dahlberg, who is preparing a translation of the Roman de la rose, informs me in a letter that one MS of the poem (Paris, BN fr. 25526) contains, among its marginalia, representations of women picking 'fruit' in the form of male genitalia. Cf. May's appetite for 'fruit' in the Merchant's Tale." (328n89)

Continuing in this tradition, an anonymous lyric of the fifteenth century skilfully exploits the ribald associations between the pear tree and sexuality:

> I Haue a newe gardyn,
> & newe is be-gunne;
> swych an oþer gardyn
> know I not vnder sunne.
>
> In þe myddis of my gardyn
> is a peryr set,
> & it wele non per bern

but a per Ienet.

þe fayrest mayde of þis toun
preyid me
for to gryffyn her a gryf
of myn pery tre.

quan I hadde hem gryffid
alle at her wille,
þe wyn & þe ale
che dede in fille.

& I gryffid her
ryȝt vp in her home;
& be þat day xx wowkes
it was qwyk in her womb.

þat day twelfus month,
þat mayde I mette:
che seyd it was a per robert,
but non per Ionet! (Robbins, "Lyrics" 15-16)

The rhetorical vigor of the verb "to graft" is established both by the context and by the forcefulness of the consonants which begin and end the word. If there were any doubts concerning its sexual connotations, they are dispelled in the fifth stanza where the "grafting" results in conception. In his influential treatise On the Nature of the Child, Hippocrates likens the development of the child in the womb to a branch grafted onto a mature tree. The father "grafts" the embryo onto the mother. The humour of this poem is intensified by the pun on "Jenet," representing both the early fruit of the pear tree, and a possible name of the "fruit" engendered by the speaker's energetic grafting. Extremely virile men produce male children, the strength of their semen subduing any significant contribution from the female.[3] Rather than the female

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[3] See my discussion of gender determination, Chapter 4.

"Jenet," the speaker fathers the male Robert. Underscored by the medical background, the joke originates in the bawdy connotations of both the pear and the act of grafting, and in parallels between the fruitfulness of the pear tree and the maiden.

May's fruitfulness is, of course, at issue in the garden scene, her condition emphasized not only through her intense craving for fruit but also by mention of the pain in her side (MerT 167; IV.2329). Adhering to Aristotelian teachings, most physicians in the Middle Ages envisioned the human uterus as bicornate, having two distinct chambers. In a statement echoed by major authorities such as Galen and Avicenna, Aristotle explains:

> Habent omnes, qui iuxta genitale continentur, sinus geminos, alterum in latere dextro, alterum in sinistro.
> [In all animals having (the womb) close to the genitals, the womb has two sinuses, one on the right side and the other on the left.]
> (De hist. an. 21r; bk, III, ch. I)

Unless twins were expected, the fetus occupied one chamber only, male children in the warmer, right hand pocket, female in the cooler left side.[4] As the womb stretched to make room for the growing fetus, the pain would be localized on one side or the other. Had January his sight as May clutches her side in response to the painful movement of the child, he may have been able to surmise even the sex of his heir.

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[4] See my discussion of the bicornate womb, Chapter 4.

2. The Importance of Pleasure

Most medieval medical theories emphasize the necessity of mutual pleasure as a prerequisite for conception, the female seed being expelled in the same manner as the male. In his study of medicine, anatomy and physiology in the Renaissance, however, Ian Maclean cites the disparity between the Aristotelian denial of the existence of female semen and Galen's vigorous affirmation. Commenting that "this idea [i.e., female semination] was known in the medieval period, but not developed" (30), he contends that theological pressures in the Middle Ages maintain Aristotle's view. When the authority of the Catholic Church becomes undermined during the Reformation, a shift towards the Galenic theory is apparent. Maclean suggests that a Protestant philosophy of marriage emphasizing that mutual pleasure provides the best possible opportunity for procreation supersedes the medieval notion that even in marriage, and even with the intention of producing children, all sexual relations are tainted.

An investigation of medieval medical writings does not substantiate Maclean's polarity. Unfettered by theological concerns and surprisingly amoral when discussing sexual activity, most of the medical practitioners of the Middle Ages were without question far more Galenic than Aristotelian, their doubts focusing on the female contribution to the actual creation of the fetus rather than any questioning of female semination. Even though in their careful study of medieval medical theories relating to sexuality they are more interested in the nature of female semen than its existence, Jaquart and Thomasset nevertheless conclude: "Doctors at the end of the Middle Ages opted generally for a cautious Galenism" (Sexuality and Medicine 30). A survey of medieval texts concerned somehow with human generation fully substantiates this Galenic predisposition.

When Chaucer's estimable Parson demonstrates his Catholic conservatism in labelling all forms of contraception as homocide, he alludes to the widely accepted theory of the two seeds:

> Eek whan a man destourbeth conceptioun of a child, and maketh a womman outher bareyne by drynkynge venenouse herbes thurgh which she may nat conceyve, or sleeth a child by drynkes wilfully, or elles putteth certaine material thynges in hire secree places to slee the child,/ or elles dooth unkyndely synne, by which man or womman shedeth hire nature in manere or in place ther as a child may nat be conceived, or elles if a woman have conceyved and hurt hirself and sleeth the child, yet is it homycide.
>
> (ParsT 306; X.575-6; emphasis mine)

Later in his "myrie tale" he cautions that if "man or womman spille his kynde" in a hallowed church, the desecration must be "reconsiled by the bysshop" (ParsT 323; X.965; emphasis mine). Although he does not name Galen as the author of this theory of reproduction, he indicates his familiarity with Galenic writings when he refers to them in his discussion of the sin of gluttony: "Agayns Glotonye is the remedie abstinence, as seith Galien" (ParsT 317; X.831). Nowhere else in his long sermon does he mention a physician by name; he quotes Aristotle, "the Philosophre," as a moral guide rather than a medical authority (ParsT 303; X.484 and 305; X.536).[5]

Although Galen differs from Aristotle in assigning procreative importance to the female orgasm, Aristotle's concept of physiology nevertheless provides the basis for Galenic writings. Permeating the Aristotelian discussion of the differences between the sexes, the concept of innate heat explains why the female is naturally inferior to the male. Basing his theory on the axiom that the hottest creature represents the most perfect, Aristotle explains that male animals produce and conserve more natural heat than the female, their hearts being larger and hence more able to concoct greater quantities of pure, hot blood (De gen. an. 139; bk. IV, ch. 6). He summarizes:

> . . . imbecilliora enim sunt et humidiora secundum naturam femina, et oortet existimare femininitatem esse velut orbitatem naturalem.
> [. . . for females are weaker and colder according to their nature, and we must consider the female character to be a sort of natural deficiency.]
> (De gen. an. 139; bk. IV, ch. 6)

Like his mentor, Galen describes woman as an imperfect man:

> Est igitur foemina mare imperfectior, una quidem ac prima ratione, quia frigidior.
> [Therefore the female is less perfect than the male for one principal reason: because she is colder.] (De usu 158; bk. XIV, ch. VI)

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[5] Siegfried Wenzel establishes that "The Parson's Tale" is a summary of translations from various sources (intro. in Summa virtutem de remediis anime). The fact that Galen's doctrine of dual semination appears in penitential manuals argues strongly for its widespread acceptance in medieval thought.

Explaining that all foetuses are potentially male, that is, perfectible, Galen reflects the Aristotelian belief that the human uterus is two-horned. Warmed by pure hot blood directly from the heart by way of the "great vessel," the *vena cava*, the right horn of the womb and the right testicle register higher temperatures than those on the left which receive less refined nutrient from vessels passing to the kidneys:

> Ex quo intelligi potest, testiculum sinistrum in maribus et matricem sinistram in foeminis sanguinem impurum adhuc atque excrementosum, humidum ac serosum recipere. Qua ex re accidit, ut ipsa quoque instrumenta, quae recipiunt, haud similia fiant temperamento; quemadmodum enim sanguis purus excrementoso est calidior, ita partes dextrae, quae ex ipso nutriuntur, sinistris sunt calidiores.
> [And from this it may be understood that the left testicle in the male and the left uterus in the female receive impure blood, full of residues, watery and serous. So it happens that the instruments that receive (the blood) become similar to it in temperament: for just as pure blood is warmer than blood full of residues, so too the parts on the right side, nourished with this are warmer than those on the left.]
> (*De usu* 171; bk. XIV, ch. VII)[6]

Sexual differentiation occurs in the womb. If the male semen is attracted to the right, warmer horn of the uterus, a male child results. If the cooler left side dominates, a female ensues:

> Atqui, si hoc est demonstratum, ac praeterea conceditur, masculum foemina esse calidiorem, probabile etiam est partes dextras masculorum, sinistras foeminarum esse generatrices.
> [Moreover, if this has been demonstrated and it

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[6] A thorough discussion of Galen's theory of the opposition of left and right in dertermining the sex of the foetus is contained in *Sexuality and Medicine* 48-52.

> has been granted that the male is warmer than the female, it is probable that the parts on the right generate males and those on the left females.]
> (De usu 172; bk. XIV, ch. VII)

The understanding that male semen always contains the potential of producing a male child, and that females result from a cooler, less perfect environment informs Aristotle's view that "Femella enim est quemadmodum orbatus masculus . . ." [the female is, as it were, a deficient male . . .] (De gen. an. 55; bk. II, ch. 3). As an "unconcocted" or somewhat undercooked man, a woman possesses all the usual male physical apparatus except that, in her case, the organs become internalized due to lack of sufficient heat. Galen explains:

> Omnes igitur quae viris insunt partes, in mulieribus etiam reperias, nisi in eo duntaxat discrepent, (quod in hoc toto sermone tenere memoria oportet,) quod in mulieribus quidem partes hae intus sunt conditae, in viris autem sunt extra ad nuncupatum perinaeum; utras enim harum priores mente voles concipere, mulierum quidem extra evertendo, virorum autem velut intro vertendo atque replicando, omnes sibi inter se similes invenias.
> [All parts that men have are replicated in women, the difference between them lying in one thing (which must be kept in mind throughout this entire discussion) that in women the parts are internal whereas in men they are external in the region called the perineum. Think first of whichever ones you wish, externalize the woman's, internalize, so to speak, and fold double the man's and you will find everything between them to be made similarly.]
> (De usu 158-59; bk. XIV, ch. VI)

He elaborates further, specifically linking male and female anatomy:

> Intellige autem mihi prius virorum pudenda inversa simul et inter rectum intestinum ac vesicam intro se recipere. Verum si hoc accidat, quem matrices

> locum occupant, eum jam a scroto occupari est necesse, extrinsecus autem utrinque testes ei adjacere, ac collum ejus sinus, qui fit, colem maris effici, quae vero cutis est in fine colis, (quod nunc praeputium appellamus) ipsum pudendum muliebre repraesentare. Intellige autem mihi rursus matricem eversam simul ac extra prominentem, nonne testes ipsius quoque parte interna esse est necesse, ipsum autem extrinsecus velut scrotum quoddam eis esse circumdatam, collum autem, quod ante in perineo erat abditum, nunc pendere ac pudendum virile effici, pudendumque muliebre (quod est velut cutacea quaedam hujus colli epiphysis) in vocatum praeputium transferri? Consentaneum his sane est et arteriarum ac venarum et praeterea vasorum spermaticorum positionem una cum his transferri: nullam enim in viris partem invenias, quae mulieribus non insit: tantum situ dissident; quae enim in mulieribus sunt intus, eae in viris sunt extra.
> [Think first of the man's pudenda inverted and placed inward between the rectum and the bladder. If this should happen, it is necessary that the scrotum would occupy the place of the uteri, with the testicles adjacent to it on either side; the penis would become the neck of the cavity that had been formed, and the skin at the end of the penis (which we now call the prepuce) would become the female pudendum itself. Think similarly of the uterus externalized and projecting. Would it not be necessary that the testes (i.e., the ovaries) would be inside it? Would it not surround them like a scrotum? Would not the neck (i.e., the cervix) which previously was hidden inside the perineum but now hanging down, be made into the penis? And would not the female pudendum (which is a skinlike growth upon this neck) be changed into that part called the prepuce? Consonant with this, the position of the arteries, veins and spermatic vessels would be changed as well: you could not find a single male part that had not simply changed its position, for the internal parts of a woman are the external parts of a man.]
> (De usu 159-60; bk. XIV, ch. VI)

Her cool uterine environment precludes the externalization of the woman's generative members:

> Sicut igitur homo animal est omnium perfectissimum, ita in eo ipso rursus vir muliere est perfectior; cujus perfectionis causa est caloris exuperantia, hic enim primum est naturae instrumentum; in quibus igitur est parcior, in his

> opisicium sit imperfectius est necesse. Nihil igitur est mirum, si foemina mare tanto est imperfectior, quanto frigidior. . . . mulier partibus genitalibus viro est imperfectior; partes enim ipsius formatae intus fuerunt, dum ipsa utero adhuc gestaretur; quum autem extare et foras emicare prae caloris imbecillitate non possunt. . . .
> [Therefore since man(kind) is the most perfect of all animals, so within this category man is more perfect than woman, and the cause of this perfection is his excess heat, for heat is nature's primary instrument; thus the workmanship is necessarily less perfect in those (animals) having less heat. Therefore it is no wonder that the woman is less perfect than the male by the amount that she is colder. . . .the woman is less perfect than the man in the members of generation, for these parts were formed within her when she was gestated in the womb, and could not emerge externally because of the defect in the heat. . . .] (De usu 161-62; bk. XIV, ch. VI)

Paralleling the male testicles with what we now recognize as female ovaries, Galen's theory of reproduction represents a major departure from the teachings of Aristotle who was ignorant of even the existence of ovaries.

Because of this lack in his anatomical knowledge, Aristotle relates the catamenia to male semen, denying that there exists any secretion peculiar to female orgasm. Although in the first book of De generatione animalium he seems to claim that both sexes secrete semen, he quickly clarifies the issue. His first statement leads to the assumption that the male and female equally contribute to the beginning of life by producing semen emitted during orgasm:

> Hoc autem maxime quis utique cedet considerans quomodo fit sperma et unde: ex hoc enim constant que natura fiunt. Hoc autem qualiter a femella et masculo accidit fieri oportet non latere. Per segregari enim talem particulam a femella et

> masculo, et in hiis segregationem esse et ex hiis, propter hoc femella et masculus principium generationis sunt.
> [The most conclusive proof of this is drawn from considering how the semen comes, and where it comes from; for out of this semen are formed those animals which are formed according to nature (as opposed to spontaneous generation, for example). But we must observe carefully the way in which this semen comes into being from the male and female. For it is just because the semen is secreted from the two sexes, the secretion taking place in them and from them, that they are first principles of generation.]
> (De gen. an. 5; bk.I, ch. 2)

Later, however, he equates menstruation to semen production:

> Quod quidem igitur sunt menstrua superfluitas, et quod proportionale ut masculis genitura sic femellis menstrua, manifestum.
> [It is plain, then, that menstruation represents a superfluity (of humours), and that it is analogous in females to the semen in males.]
> (De gen. an. 30; bk. I, ch. 19)

Because males produce only one kind of semen, and because the menses form the generative secretion of the female, a second seminal fluid in the female defies logical explanation:

> Quoniam autem hoc est quod fit femellis ut genitura masculis, duas autem non contingit spermaticas simul fieri segregationes, manifestum quod femella non confert sperma ad generationem. Si enim sperm esset, menstrua non utique essent: nunc autem propter hec fieri illud non est.
> [Now since this is what corresponds in the female to the semen in the male, and since it is not possible that two sperms should be emitted together, it is plain that the female does not contribute sperm to the process of generation. For if she had semen she would not menstruate; but as it is, because she has the latter she has not the former.] (De gen. an. 31; bk. I, ch. 19)

The male provides the efficient cause of generation which acts upon and sets in motion the generative material found in the womb:

> Quemadmodum enim diximus, generationis principia utique quis non minime ponet masculum et feminam: masculum quidem ut motus et generationis habens principium, femininum autem ut materie. [Therefore as we have said, the male and the female principles may be put down first as origins of generation, the male having the principle of movement and generation (i.e., the efficient cause), the female the material.]
> (De gen. an. 5; bk. I, ch. 1)

While acknowledging the obvious necessity for masculine orgasm in order to propogate the race, Aristotle denies that the female contributes anything other than the matter from which the embryo may be formed. He further observes that conception sometimes occurs even when women experience no delight whatsoever:

> Sine quidem igitur masculi emissione in coitu impossibile concipere, et sine muliebrium superfluitate, aut deforis procedente aut intus sufficienti existente. Non accidente tamen consueta fieri femellis delectatione circa collocutionem talem concipiunt, si fuerit locus dispositus, et descendentes matrices prope. [It is impossible to conceive without the emission of the male in coitus, and without the woman's secretion, whether it be discharged externally or whether there is only enough within the body. Women conceive, however, without experiencing the pleasure usual in intercourse if the place is so disposed and the womb is descended.]
> (De gen. an. 59-60; bk. II, ch. 4)

Galen counters the authority of his great predecessor by basing his theory on the similarities between the male and female organs of reproduction and by substantiating it with Aristotle's own claim that the female is in fact an imperfect male. If the ovaries are smaller, colder versions of the testicles, then their function must be the same:

> Statim autem et testiculos foemina erat habitura minores atque imperfectiores, ac sperma, quod in

> ipsis erat futurum, parcius ac frigidius humidiusque, sequuntur enim haec quoque necessario caloris penuriam.
> [Of course the female must have smaller, imperfect testes, and the sperm which is produced in them must be less as well as colder and moister, for these things necessarily follow from a deficiency of heat.] (De usu 164; bk. XIV, ch. 6)

The pseudo-Galenic treatise De semine, accepted as genuine by physicians in the Middle Ages, claims that the author has seen the oviducts full of semen. Describing the anatomy of the female reproductive tract, the author writes:

> Maxime vero plenum est vas seminale in animalibus venerem appetentibus, sicut vicissim vacuum a recenti coitu.
> [Truly, the seminal vessels are exceedingly full in animals who seek intercourse, just as it is empty as a result of recent coitus.]
> (594; bk. II, ch. 1)

Male orgasm propels superior semen into the female's womb where, if conception is to take place, it joins the inferior but nevertheless important female seed. Orgasm is therefore necessary on the part of both sexes in order to procreate; the female must experience pleasure similar to the male. Galen explains that the primary cause of the pleasure inherent in the sexual act resides in the will of the gods who wished an "immensam venereorum cupidatem esse ingenitam" [immense desire for love to be innate (in us)] and a "ingentem voluptatem esse conjuctam" [strong pleasure to be joined (to it)] (De usu 180; bk. XIV, ch. 9). Secondly, the delight is due to the nature of the organs of generation themselves, for nature intends the human race to continue, even though individuals are not immortal. Semen plays a role in the instigation of sexual activity as well as in the propagation of the race. Secreted by the female testes or ovaries, this moisture possesses an acrid, biting quality which because of its need for evacuation stimulates the desire for intercourse and contributes to pleasure when heated by the friction of coitus. Galen affirms that it is both divinely ordained and entirely natural that both parties involved in the act of generation achieve orgasm (*De usu* 180; bk. XIV, ch. 9).

Further, he proclaims the necessity of orgasm to procreation in that its expulsive force propels both male and female semen into the uterine cavity, rendering conception possible:

> Quum enim marem semen foras ejaculari, foeminam autem in se ipsam oporteret, ob eam causam et vasa, quae semen a testibus acciperent, in maribus quidem ad pudendum exporrexit, et ad meatum, qui illic est, orificio adaperuit per quem etiam lotium foras emittitur; in foeminis vero tum in ipsas matrices inseruit, tum constituit, ut in capacitatem internam semen excernerent. . . . Verum haec quidem naturae opera sunt mirabilia; tum etiam quod in coitibus partes genitales undique extendantur, quo simul quidem matricum collum dirigatur ac patefiat, ut ante memoravimus, simul autem semen excernatur. Quantum enim ad ea, quae in vasis continentur, excernenda ipse partium velut spasmus, qui in coitu venereo accidit, habeat momenti, ex magnis epilepsiis et eo affectu, qui gonorrhoea nuncupatur, discas. Siquidem in vehementibus epilepsiis, quod corpus totum vehementer convellatur, et cum eo partes genitale, semen idcirco excernitur; in gonorrhoeis autem sola vasa spermatica afficiuntur. Quae igitur tensio in praedictis affectibus vasis iis accidit, ea et in coitibus cum iisdem accideat, semen excernunt.
> [Since it was necessary for the male to send the semen outside his body and for the female to send it into herself, the vessels receiving it from the testes in the male were extended to the pudendum and there opened into a channel through which the urine passes out; in the female they were inserted

> into the uteri themselves, where they cause the semen to be expelled into the free space within. . . . Truly these works of nature are marvellous, and there is in addition the general tensing of the generative parts in coitus, in order that, as I have said earlier, the neck of the uterus may be straightened and opened and at the same time semen may be evacuated. Indeed, from severe attacks of epilepsy and from the disease called gonorrhea you may learn how great a power the spasm, so to speak, of the parts that accompanies the sexual act has to expel what they contain. For in violent attacks of epilepsy semen is expelled because the whole body and with it the generative parts are strongly convulsed, whereas in gonorrhea only the spermatic vessels themselves are affected. Now in coitus they have the same sort of tension with which they are affected in these diseases, and so they expel the semen.]
> (De usu 186-88; bk. XIV, ch. X)

The antagonism between Aristotle's diminution of woman's role in generation and Galen's more egalitarian position created at least as many problems for Arab physicians as for their Christian counterparts. Arabic attempts to resolve the dilemma by accepting the existence of female sperm while rejecting its equality to male semen were welcomed by doctors in the West who depended upon Islamic medicine for a link with the great Greek practioners. Avicenna's authoritative Canon unequivocally states that "all simple tissues, except fat and flesh, originate from a union of the male and female semen." Faithful to Galenic physiology, the Islamic "Prince of Physicians" explains that "in the male, testicles receive semen from the preparatory tissues and discharge it through the channels between the testes and the urethra. In women the seminal fluid is conveyed through channels to the uterus for the growth (of the foetus)" (Gen. Prin. 51). While

Galen's comparison of male and female reproductive systems informs Avicenna's anatomical discussion, his conclusion returns to Aristotelian foundations. The female contribution to procreation provides nourishment, material, for the embryo created by the male principle. Like most of his colleagues, Avicenna questions the function of female semen, not its existence.

Having established that the female testicles propel their semen into the womb during orgasm, "De chaque testicule naît un corps par lequel le sperme se verse dans la cavité de la matrice" (391), Haly Abbas suggests that the female semen provides a necessary coolant and diluent to the thick, hot male sperm which by its very viscosity encounters difficulty covering the entire uterus:

> Le melange des deux spermes est nécessaire pour deux utilités. La première est que le sperme de la femme est un ailment convenable au sperme de l'homme, parce que le sperme de l'homme est épais et d'une constitution chaud, tandis que la sperme de la femme est tenu et d'une constiution froide. A cause de son épaisseur le sperme de l'homme ne peut s'étendre et se repandre suffisamment et par sa chaleur il gâterait la matière du foetus; le sperme de la femme est donc nécessaire pour en modérer l'epaisseur et la chaleur. (397)[7]

Primarily functioning as an additive to male semen, female sperm also creates the membrane surrounding the foetus. Although he does not mention its specific role in forming the amnion, Bartholomaeus Anglicus repeats the belief that female semen cools and thins its male counterpart:

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[7] This function attributed to female semen seems to originate in the pseudo-Galenic De semine 526; bk. I, ch. 4.

> For but digest blood of þe fadir and of þe modir were imedled togedre þere myȝte be no creacioun noþir shapinge of childe, for þe mater of blood þat comeþ of þe male is hote and þicke, and þerfore for þe grete þicnes it may nouȝt sprede itself abrood. And also for passinge hete þe mater of þe childe schulde be distroyed and wasid but it longiþ temperament of wommannes blood, þat haþ contrarie qualite[es]. (Trevisa 1: 294)

Although Maimonides defends Aristotle against Galen, pointing out many of the contradictions in Galen's work, he nevertheless accepts the concept of female seed. Citing a case history, he prescribes masturbation to the point of orgasm for the alleviation of menstrual disorders. Both excessive bleeding and failure to menstruate relate to the "retention of the seed of the woman." Describing his treatment of a widow suffering from "a spasm of the uterus," he observes:

> Because of the warmth of the suppositories that were inserted below, and because of the palpitation of the genitals by the hand at the time when the medication was inserted, she experienced an orgasm, together with a pain in the vagina which is similar to that which occurs during normal intercourse. After this, a thick [smegma] was discharged, and the woman was alleviated from all the damaging complications. (Aphorisms 2: 36)[8]

Retained because lack of sexual activity precluded orgasmic release, the widow's seed putrified causing pain and distention of the womb. Once the decaying semen was expelled, the woman returned to health.[9]

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[8] Anthonius Guainerius, professor of medicine at the University of Padua in the early fifteenth century, proposes the same treatment. See Lemay 323.

[9] The phrase Maimonides uses to denote orgasm translates literally as "to send the seed." (See Aphor. 2: 161n36.)

The Trotula major presents no full discussion of the nature of female seed, although the author appears to be faithful to Galenic theory when describing the causes and cures of uterine disorders. For example, a mola or growth in the womb which mimics the development of a foetus is "enchesounde & caused as þe moder vnderstondith of þe womans owne seed moche witholden in þe marice with lakking of mannes doyng" (Guide 140). Similarly, women without a sexual outlet suffer from "suffocation" of the uterus. The womb, seeking male semen to fertilize its own supply, migrates through the body, causing shortness of breath, heart problems and even dementia. This morbid condition originates in the retention of corrupt humours "that been in þe moder as men ben delivered of sede that passith from her stones that ben by her yerde. And also men fallen into diverse syknes for withholdyng of her sede within hem, riȝt so doeth women" (Guide 86). Like Maimonides, the author of this tract prescribes orgasm as a cure, warning, "But þus vnderstonde: in lawfull company-yng, as with her housebandes and with none other" (Guide 90). Should such relief be impossible, the author suggests various herbal remedies to be applied to the "privy member," perhaps alluding to manual stimulation in the insertion of medication such as explicitly described by Maimonides.

Albertus Magnus reacts with considerably less certainty to the entire question. The Questiones super de animalibus deal directly with the question, "Utrum feminae spermatizent?" [Whether women produce sperm] (271; bk. XV, qu. 19). Concluding that women cannot secrete semen because they lack sufficient heat to concoct sperm from blood, he echoes Aristotle in asserting that menstrual blood parallels semen:

> Dicendum, quod proprie loquendo femina non spermatizent. Et huius ratio est, quia sperma est superfluitas ultimi cibi complete digesti; sed completio digestionis est ex calore forti, feminae autem sunt debilis caloris, et ideo in femina non est virtus sufficiens generandi sperma.
> [I say that it is properly said that women do not produce sperm. And this is the reason, that sperm is a superfluity of completely digested food; but complete digestion comes from intense heat, and women are deficient in heat, and thus in women there is not suffient virtue to generate sperm.]

Moreover, female pleasure during coitus does not originate in the emission of sperm, as in males, but by the friction caused by the movement of the penis or the sensation of male sperm entering the womb:

> Ad tertiam rationem dicendum, quod delectatio in coitu non provenit solum ex emissione spermatis. Pueri enim et senes, qui non possunt spermatizare, delectantur in coitu, immo delectatio provenit ex tractu spermatis virilis in matrice vel virgae ad vulvam, non quia mulier spermatizet.
> [To the third reason I say that pleasure in coitus is not produced solely by the emission of sperm. Boys and old men who are unable to produce semen delight in coitus, therefore the pleasure comes from the feel of the virile sperm in the womb or the (movement of) the male member in the female genitalia, not because women produce sperm.]

The Universal Doctor, however, was by no means a strict Aristotelian.[10] Experience taught him that women secreted a humour during intercourse which bore no relation to menstrual blood, yet Aristotle maintained the impossibility of two generative humours. In an attempt to reconcile observation and theory, Albert comes very close to a modified Galenism. In De animalibus, his large paraphrase and commentary on Aristotle's zoological writings, he deals extensively with the female contribution to procreation. Although he resists labelling the female emission "sperm," he nevertheless concludes that a separate humour accompanies female sexual pleasure. In an apparent contradiction of the notes taken by Conrad of Austria, Albert writes that sexual pleasure seems to be necessary to conception. Disturbed by reports from experienced women who claimed to have conceived without pleasure, he develops a theory of seminal retention. Through an erotic dream or some similar delightful fantasy, female sperm is produced and gathered in the uterus awaiting union with male seed. Although present pleasure may not accompany the sexual act, pleasure at some point provides the female semen necessary to reproduction (De animalibus 1038-39; bk. XV, ch. 6). In an earlier chapter he refers uncritically to Avicenna, remarking, "it is well known that for conception to result, it is necessary that the two sperms meet in the same place and that they are emitted at the same time" (De animalibus 737; bk. X, ch. 2).

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[10] For a detailed discussion of Albert the Great's difficulties with the concept of female semination, see Jacquart and Thomasset, Sexuality and Medicine 67-69. See also Jacquart and Thomasset, "Albert le Grand et les Problèmes de La Sexualité" 73-93.

Book twenty-two of De animalibus contains a concise summary of Albert's thought on human reproduction. Explaining that he will recapitulate his position briefly without discussion, he states unequivocally that, "without exception human reproduction results from the act of sexual intercourse by which the potentialities of the two sexes are inextricably mingled. The man's sperm acts as the operative and formative agent while the woman's sperm or generative fluid, along with her menstrual blood, serves as the material basis." He further mentions that human coitus is "accompanied by a more exquisite level of pleasure than is found in animals" (De animalibus 60; bk. 22, ch. 3). Albert's difficulties with both Aristotelian and Galenic theories illustrate the struggle of medieval thinkers to explain human reproduction. Significantly, he opts for an uneasy compromise, allowing the existence of female sperm and the necessity of sexual pleasure while denying women any primary role in the creation of new life.

Even the greatest medieval opponent of the two-seed theory accepts as fact that woman emits fluid of some description at the moment of orgasm, terming this humour "female seed" (Hewson 86). Giles of Rome devotes half of his long disquisition on conception to problems with Galen's theory, but he never questions the existence of female emission. His investigation in De formatione corporis humani in utero concentrates on the nature of the so-called female sperm and its role in conception. Concluding that "the female seed neither performs a passive part, in place of, or supplementing the menstrum as the foetal matter, nor does it have any active function in the induction of form"

(Hewson 86), he nevertheless concedes that "conception is facilitated by the simultaneous emission of both male and female seeds" (Hewson 89). Citing Averroes, Giles maintains that conception can occur without female orgasm but emphasizes that the presence of female seed greatly facilitates procreation. Although he utterly rejects Albert's explanation that seminal matter remains in the uterus awaiting union with its male counterpart, he agrees with authorities who credit female semen with an important role in conception. It cools the hot male semen so that the womb retains the moist character necessary to embryonic development; it thins the viscous sperm so that it coats the uterus evenly; it provides the substance for foetal membranes; and, finally, it provides the woman with intense double pleasure, necessary if she risks the suffering of childbirth. Female delight in coitus measures twice that of the male, for she not only emits semen but receives that of her partner.[11] If the male semen possesses sufficient heat and vigour, it can impose itself on an unreceptive womb, but in any case where its power diminishes, female orgasm constitutes an invaluable aid to conception (Hewson 90-91).

Although medieval theologians concentrate mainly on the morality of male sexual pleasure, the few references to the female role in reproduction cited by John T. Noonan indicate a general acceptance that female semination must precede conception. According to Noonan's study, Chaucer's Parson echoes his more learned colleagues in condemning both women and their male partners who experience orgasm without procreative intention. In the early eleventh-century Decretum, for example, Bishop Burchard includes an entire section on questions which the confessor may direct especially to women. This influential penetential links all non-reproductive sexual activity including masturbation, lesbianism and the practice of unnatural postures, which, related by the fact that semen is emitted with no chance of conception, merit similarly severe penances (Noonan 163-67).

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[11] Cf. William of Conches 239: "Duplex igitur est mulieris in coitu delectatio, uidelicet in emmisione proprii seminis, & in receptione alterius." [Therefore the pleasure women experience in coitus is double, consisting of the emission of their own semen and in the reception of the other.]

While attempts at birth control such as the practice of coitus interruptus earned universal condemnation from ecclesiastical authorities because precious male semen was emitted outside the approved receptacle, amplexus reservatus, the inhibition of male ejaculation by manual or mechanical pressure, apparently evaded attention until the thirteenth century (Noonan 298). Huguccio, one of the most important commentators on the Decretals of Gratian, writes that a man may pay the conjugal debt by proceeding until his wife is satisfied, then withdrawing without ejaculation:

> Indeed, often in such cases a woman is accustomed to anticipate her husband, and when the pleasure of the wife in the carnal work is satisfied, I can, if I wish, withdraw, not satisfying my pleasure, free of all sin, and not emitting my

seed of propogation.[12]

Although the Bishop of Worms refrains from comment on the culpability of the satisfied wife, in the fourteenth century Peter de Palude remarks that this practice avoids mortal sin unless female semination, measured by orgasmic pleasure, occurs. The Dominican archbishop's opinions were adopted without comment by writers in the next century (Noonan 298). Whatever their reservations about its function, influential voices in the medieval church seem to have accepted the existence of female seed and the necessity of mutual orgasm to procreation.

Reflecting Galenic principles, the Franciscan, Bartholomaeus Anglicus, describes the physiology of conception: "To fulfille suche generacioun it nediþ þat tweye beestis come togedres, male and female; of þe seed of ham bytwene eueriche beest is igendred" (Trevisa 1: 262). In a later chapter he explains that "þe mater of þe childe is mater seminalis, þat is ishad by worching of generacioun, and comeþ of alle þe parties of þe fadir and þe modir" (Trevisa 1: 294). Paralleling male experience, the emission of female seed depends on orgasmic pleasure, the "worching of generacioun."

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[12] Rufinus, Summa decretorum, ed. Heinrich Singer (Paderborn, 1902), 2.13; qtd. in Noonan 297.

After establishing that female generative members reflect those of the male,[13] the Speculum naturale similarly conforms to Galenic doctrine in positing two semens. Quoting Avicenna, Vincent writes:

> Generationis itaque corporis humani principium duæ res existunt. Vna videlicet sperma viri qui tenet locum factoris, altera vero sperma mulieris & sanguis menstruus, qui locum tenet materiei. [Therefore two principles exist in the generation of the human body. It is seen that the first is the male semen which holds the principle of movement (efficient cause), and the other is truly the female sperm and the menstrual blood which hold the principle of material (material cause).]
> (Spec. 2316; bk. XXXI, ch. XXXI)[14]

He then invokes William of Conches to explain the infertility of prostitutes. Accommodating their clients for money rather than delight, they never achieve orgasm. Because no seed is emitted, no pregnancy results:

> Quæri autem potest, cum frequentissime coeant prostitutæ mulieres, vnde sit hoc quod raro concipiunt? Ad hoc autem respondeo, quod ex uno semine non potest fieri conceptio, nam vbi non conueniunt sperma viri & mulieris, mulier non concipit: Prostitutæ ergo, quæ pro solo precio coeunt: nullam delectationem hinc habentes nihil emittunt, quare nec gignunt.
> [However the question can be posed: why do prostitutes who have frequent intercourse rarely conceive? My answer to this is that conception cannot result from a single seed, for when the male and female sperm do not mingle, the woman does not conceive. Prostitutes have intercourse only for money, experiencing no pleasure. As a result, they emit nothing and therefore there is no conception.]
> (Spec. 2313; bk. XXXI, ch. XXVI)[15]

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[13] "Omnia vero membra similia sunt in maribus & feminis . . ." [Truly all members are similar in males and females] (Spec. 2050; bk. XXVIII, ch. LXXXI).

[14] Cf. Spec. 1769; bk. XXIV, ch. LXXX.

[15] Cf. William of Conches 240, "Meretrices cur raró concipiant." [Why do prostitutes rarely conceive?]

Responding to the objection that if coitus without pleasure cannot result in conception, how can pregnancy after rape be explained, Vincent cynically comments that the fragile flesh may take pleasure even in a repugnant act:

> Dicis atque, quod mihi dixisti, sine fœmine semine nil concipi, non est verisimile. Videmus enim raptas reclamantes & plorantes violentiam passas concepisse: Vnde apparet illas nullam in illo opere habere delectationem, sed sine delectatione non potest sperma emitti? Respondeo, & si raptus in principio opus displiceat, ex carnis fragilitate tamen in fine placet.
> [So you say that what I have told you about no conception being possible without female seed is not true. For we see that women have claimed that they have been raped and have suffered violation and that they have conceived. From this, it appears that they have no pleasure in the act, but without pleasure no sperm can be emitted. I reply that if at first the act displeased them, in the end it pleases them because of the weakness of the flesh.] (Spec. 2313; bk XXXI, ch. XXVI)[16]

Bolstered by the weight of medical authority, Vincent accepts without qualification the doctrine of two seeds.

Written in the seventh century, Isidore of Seville's Etymology constituted an authority much consulted in the later Middle Ages. The Speculum naturale, for example, quotes Isidore frequently, especially on questions of human physiology. In the section dealing with the nature of semen, Isidore writes, "Girls are born from the paternal semen and boys from the maternal, because every birth consists of two seeds" (Isidore 48). Making no distinction between male and female semen, he explains that it is concocted from blood, "ejaculated during coitus and taken up in the woman's womb" (Isidore 139). Aristotelian misgivings about the dual seed theory do not appear in the encyclopaedias in any form, these more popular medieval writings surpassing even academic medical texts in the defense of female semen. The common sexual knowledge of the Middle Ages accepted without question the notion of female seed and the necessity for female orgasm in the generative act. Chaucer's Parson certainly refers to Galenic physiology in a way which indicates an appeal to general understanding. This perception informs and illuminates the action of "The Merchant's Tale," contributing significantly to the dynamics of the final resolution.

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[16] Cf. William of Conches 241: "Raptæ etiam cur concipiant" [Why do victims of rape conceive?]

Proud of his sexual prowess, January readily believes May's hints that she is pregnant, to the point of offering his back as a footstool that she might ascend the tree (MerT 167; IV.2348). His primary motive for marriage may have emphasized carnal pleasure over procreation (MerT 156; IV.1448-49), but the thought of progeny indisputably enters his mind. Reinforcing the recommendation early in the narrative that a man may "engendren hym an heir" (MerT 154; IV.1272) on a young wife, January states that possible barrenness constitutes one of the main detractions of an old woman:

> Ne children sholde I none upon hire geten;
> Yet were me levere houndes had me eten
> Than that myn heritage sholde falle
> In straunge hand. . . . (MerT 156; IV.1437-40)

The old knight "lyved in greet prosperitee" (MerT 154; IV.1247), his wealth reflected in material possessions, for

"His housynge, his array, as honestly / To his degree was maked as a kynges" (MerT 163; IV.2026-27). To his earthly treasure he adds his young wife, promising her "al myn heritage, toun and tour" (MerT 165; IV.2172) provided she remains faithful to him. Clearly the disposition of his inheritance weighs on his mind, augmented by the usual fears for the legitimacy of his offspring. Having kept May under close supervision (MerT 164; IV.2085-91) and resting secure in his manly virility, he has little reason to doubt that the child which May claims to carry belongs to him.

Reproductive theory indicates, however, that May's pregnancy at this point in the tale is impossible, for medieval physicians insist that semen from the father and the mother must mingle if procreation is to occur. Serving a more important thematic purpose than simply to emphasize the Merchant's voyeurism, the speculations on May's enjoyment of her marital relations allude to these theories current in medieval thought. January's anticipation of his wedding night, "Now wolde God ye myghte wel endure / Al my corage, it is so sharp and keene!" (MerT 160; IV.1758-59), does not find an echo in his new wife's response: "The bryde was broght abedde as stille as stoon" (MerT 161; IV.1818). Nor does May reflect his delight at the conclusion of his efforts. While January croaks his pleasure, the slack skin about his dessicated neck shaking in time, May's reaction is less than ecstatic. Hinting first that January's labours do not impress his young wife, "But Got woot what that May thoughte in hir herte" (MerT 161; IV.1851), the Merchant then provides an outright declaration of her aversion, "She preyseth nat his pleyyng worth a bene" (MerT 161; IV.1854). Slightly later, May's silent acquiescence to the payment of her conjugal debt is described once more, the Merchant reiterating his suggestion that she does not find a "paradys" in her mate. Coyly refusing to provide further details of the conjugal scene, the Merchant comments, "How that he wroghte, I dar nat to yow telle / Or wheither hire thoughte it paradys or helle" (MerT 162-63; IV.1963-64). In thus keeping the state of May's sexual satisfaction before the audience, Chaucer not only uncovers the Merchant's prurient interest in vicarious sex but also provides valuable background to May's later intimation that she is pregnant. The doctrine of the two seeds informs "The Merchant's Tale," providing evidence against May's pregnancy until she engages in more satisfactory intercourse with a younger lover.

3. Medicine and Metaphor

Although the medical theories of conception indicate that May's desire for pears stems from artifice more than pregnancy, the imagery of springtime in the final scene, considered in the light of medical background, confirms that the tale demands a satisfactory and fecund conclusion. Throughout the narrative Chaucer emphasizes varying states of sexual satisfaction, invoking medical lore which denies May's pregnancy before the meeting in the tree. Yet, in addition to furthering the plot, her obvious (albeit false) hints that she is pregnant set the stage for actual pregnancy by the conclusion of the tale. However, young Spring married to old Winter must obtain external help if this vision is to be fulfilled. The imagery provides strong suggestions as to the source of this assistance.

According to the medical authorities, spring provides the ideal time for procreative activities because its warm, moist constitution aids the bodily temperament required for fertile coitus (Gen. Prin. 164). In the section dealing with the properties of the four seasons, the Speculum naturale observes, "Veris tempus huic operari scilicet coitui, quia temperatum est, convenit" [Spring is the time to come together for these activities, that is, sexual intercourse, because it is temperate] (Spec. 1330; bk XV, ch. LXVI).[17] Bartholomaeus captures spring's qualities in an exuberant passage which provides the rationale for spring as a time of sexual activity. Lasting until the seventeenth day of July, spring exhibits the balance of temperaments conducive to robust health:

> And springinge tyme is bitwene hoote and coolde most temporat, bitwene wintir and somer mene in qualite, and parteyneþ wiþ eiþer in qualite, for þanne blood biginneþ to multiplie in bodies of beestis, and humoures þat were ibounde and made þicke in wintir biginneþ to meue and to be dissolued by hete of springinge tyme. Also springeinge tyme in is qualitees is temporat ande moost heleful tyme and lest greuous and sekelewe, as Constantyn seiþ and Galien also. For in þese tweye qualites kynde haþ likynge, for hete is

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[17] Cf. William of Conches 239.

> cause effectif "worchinge" [of] norischinge and encresinge, and þe moisture is cause material. And þerfore in springeinge tyme blood is most ingendrid þat is most nedeful to norischinge of body. . . . Springinge tyme is þe tyme of gladnes and of loue. . . . (Trevisa 2: 523)

January's "olde lewed wordes" (MerT 165; IV.2138-48) recall the Biblical Song of Songs celebrating the passing of winter and the return of spring, itself a life-affirming cycle. He leaves his "palys" to enter the green world of his garden where the pear tree waits, charged with fruit. The greenness and beauty of January's private playground suggest the lush fecundity of "nature naturing" under the engendering warmth of Phoebus' golden rays (MerT 163; IV.2220). Sexually charged, the action in the garden points to conception, not sterility, to youthful pleasure rather than aged lust. Eager to encounter her lover, May orchestrates an elaborate strategem to outwit her jealous husband in order to experience physical delight. Never stated, the conclusion that the arboreal copulation is both satisfying and productive merely continues the imagery established in the entire scene.

The image of pliable wax finds similar analogues in medical explanations. Medieval medical writers may disagree with Aristotle's denial of female semen, but they concur wholeheartedly with his view that the male contributes the principle of procreation, the female the material. Frequently employing metaphors to explain this process, Aristotle compares the action of the male semen upon the female matter to a carpenter working with wood or the moulding and shaping of wax into a recognized form:

> Sed adhuc femella quidem, secundum quod femella, passivum, masculus autem, secundum quod masculus, factivum et unde principium motus. Quare si sumantur extrema utrorumque, secundum quod hoc quidem factivum et movens, hoc autem passivum et motum, non est quod fit ex hiis unum, nisi sic ut ex carpentario et ligno lectus, aut ex cera et forms spera.
> [But the female, as female, is passive and the male, as male, is active and the principle of motion comes from him. Therefore, if the highest category is taken, the category in which one is active and moving and the other is passive and moved, the one thing made by these is produced in the same way that a bed is produced by a carpenter and wood, or a ball is produced by the wax and the mould.] (De gen. an. 36; bk. I, ch. XXI)

Galen appropriates the Aristoleian image to his own discussion of procreation. Rejecting the generative theories of earlier physicians, Galen compares the workings of male semen upon the female to a sculptor working in stone or in wax, explaining that while they simply change the shape of their material, the male semen effects a transformation in the very essence (De nat. fac. 82v-83r; bk. II, ch. III).

Remarkably similar imagery occurs in "The Merchant's Tale." When deciding on a suitable candidate for his matrimonial intentions, January optimistically envisions moulding a young woman to his desires, proclaiming, "But certeynly, a yong thyng may men gye, / Right as men may warm wex with handes plye" (MerT 156: IV.1429-30). Rejecting any woman "thritty yeer of age" (MerT 156; IV.1421) as past physical attractiveness and reproductive possibility, he fixes his desires on a young wife to satisfy him sexually and to produce an heir. Linked in this fashion to both pleasurable and procreative activities, the image of warm wax once again appears when Damian counterfeits the key to January's private garden. Obvious in the context of the poem, the genital connotations of "clyket" and "wyket" have been fully delineated by John Bugge, who concludes that Damian's penetration of January's garden refers metaphorically to his replacement of the old knight in amorous activity with May (Bugge 59-60). Just as the image of the key is imprinted in wax, so Damian's image is imprinted on May's sensibility:

> But sooth is this, how that this fresshe May
> Hath take swich impression that day
> Of pitee of this sike Damyan
> That from hire herte she ne dryve kan
> The remembrance for to doon hym ese.
> (MerT 163; IV.1977-81)

Intending to be the craftsman moulding the warm wax of his wife's affections, January is pre-empted by a better worker who imprints his own image upon May. Meanwhile, the would-be artisan is transformed into the manipulated material. Flushed with lustful desires for the unresponsive May, January declares that she remains "so depe enprented" in his thoughts that he cannot bear to be absent from her (MerT 165; IV.2177-82). The "imprinting," however, is not mutual; May retains Damian's image, not her husband's. Lacking the active male principle necessary to imprint his image upon the material of his wife, January experiences a loss of power at the conclusion of the tale which is metaphorically reflected in his feminized condition.[18]

An understanding of the medical background to "The Merchant's Tale" substantiates the opinion of those scholars beginning with Miller who suggest that May's most successful joke is her pregnancy by Damian. Pharmacological lore regarding pears elucidates May's request in the garden; the doctrine of the two seeds explains the narrator's interest in May's sexual satisfaction; the properties of spring point to fecundity and renewal of life; and the image of wax recalls the workings of male semen upon female material. Undergirded by this medical knowledge, the humour of the tale resides in January's triple deception. He is first deluded into believing that May's pregnancy occasions her desire for fruit; secondly that his adulterous wife did but

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[18] In Book V, Metrum 4, of The Consolation of Philosophy, Boethius disagrees with the Stoic philosophers who contend that sensory impressions are imprinted on the soul from external objects. Chaucer's translation explains:

> (as who seith that thilke Stoycienis wenden that the sowle had ben nakid of itself, as a mirour or a clene parchemyn, so that all figures most first comen fro thinges fro withoute into soules); (Textus) ryght as we ben wont somtyme by a swift poyntel to fycchen lettres empriented in the smothenesse or in the pleynesse of the table of wax or in parchemyn that ne hath no figure ne note in it (Boece 464).

See Marcia Cornish's study of the Stoic tradition for an explanation of this concept of knowledge (1.51-53). Cornish later discusses Boethius's refutation of this theory in his insistence on the primacy of the imagination to perception (2. 289-90). Boethius contends that the human mind seeks sensory input; it does not remain a passive receptor. The experience of the characters in "The Merchant's Tale" seems to fall within the paradigm established by the Stoics. The medical background coalesces admirably with this theory of knowledge.

"strugle with a man upon a tree" (MerT 167; IV.2374); and, finally and most outrageously, that the expected child, newly conceived in May's arboreal adventure, is his own biological heir. The literary antecedents, the imagery and the medical background all coalesce to convince the audience that May's conception constitutes her greatest deception.

CHAPTER 3

"AL THAT A MAN BILONGETH TO": JANUARY AND DAMIAN

Just as the pear tree forms a symbolic center branching out to cover all aspects of May's sexual physiology, so the aphrodisiacs to which January resorts on his wedding night comprise the nexus of a complex series of medical teachings relating to his sexual and procreative abilities. Speaking of the "ypocras, clarree, and vernage / Of spices hoote" (MerT 161; IV.1807-08) with which January fortifies himself, Paul Delany provides a useful analysis of the therapeutic effects offered by warm, spiced wine. By referring to Constantinus's De coitu, Delany demonstrates that January's tonic drinks illustrate his desire to achieve the right balance of humours for effective and fertile intercourse by countering the cold dry constitution of old age. However, as Emerson Brown, Jr., states in "January's Unlikely Elde," the scientific theories of the time pronounce sexual activity for the elderly "nearly a physical impossibility" (99). While the scholars who have researched some of the medical studies relating to senescence and sexuality have provided valuable information about January's almost manic drive to remain sexually vigorous, none has joined together all the threads of a very complex web of medical lore underlying the action of "The Merchant's Tale." An investigation of medical writings current in the Middle Ages reveals that January's sexual excesses, his advanced years and his blindness all combine to signal that his dangerously debilitated condition renders him incapable of engendering an heir.

January's blindness demonstrates more than his physical senility, for physicians from the classical period onward equated loss of sight with excessive sexual indulgence. In clearly delineating the intricate connections between the eyes and the production of semen, medical writings suggest that blindness indicates a dangerous depletion of both natural moisture and *spiritus*, the life-giving breath which imbues all parts of the living organism. When exacerbated by the normal losses attendant upon old age, such a diminution can become life-threatening.

When January strengthens himself with electuaries prior to a night of love-making, the stakes are far higher than sexual success or failure, for coitus constitutes a danger even to the young and fit. In the opinion of medieval doctors, excessive sexuality always leads to disability or death. January's blindness shows that none of his attempts to warm and moisten his aged body has met with any success. The dimished supply of moisture and vital *spiritus* which cause January's blindness also effectively rules out the possibility that he might father a child. More seriously, the medical condition behind January's symptoms suggests that his very life may be threatened by his carnal appetites.

Damian, on the other hand, enjoys the warm, moist constitution associated with youth and fertility. Moreover, his reproductive potential becomes increased by lovesickness, caused, according to medieval authorities, by a superfluity of semen needing expulsion. Medical writings indicate that when Damian climbs into the pear tree, his physical state corresponds to his fecund environment. The medical background to the tale therefore strongly suggests that a child will be the result of the arboreal tryst. Throughout the tale, the narrator maintains this focus on the sexual states of the paricipants in the love triangle in order to emphasize the irony inherent in the final scene. Medieval explanations of sexuality indicate a sharp contrast between May's sterile relationship with January and the fruitful liaison in the pear tree.

1. Medicine and January's Blindness

> O sodeyn hap! O thou Fortune unstable!
> Lyk to the scorpion so deceyvable,
> That flaterest with thyn heed whan thou wolt
> stynge;
> Thy tayl is deeth, thurgh thyn envenymynge.
> O brotil joye! O sweete venym queynte!
> O monstre, that so subtilly kanst peynte
> Thy yiftes under hewe of stidefastnesse,
> That thou deceyvest bothe moore and lesse!
> Why hastow Januarie thus deceyved,
> That haddest hym for thy fulle freend receyved?
> And now thou hast biraft hym bothe his yen,
> For sorwe of which desireth he to dyen.
> (MerT 164; IV.2057-68)

With these words the Merchant recounts January's fall from happiness, likening Fortune to a scorpion which entices yet stings and which has caused the ancient knight's disability. Though in medieval writings the poisonous scorpion often serves as an image of Fortune's vagaries, it also frequently refers to the sexual improprieties of a "wicked woman," sometimes even representing lust itself. Ecclesiasticus 26.10, for example, observes that consorting with an unfaithful woman resembles holding a scorpion: "As a ȝok of oxen that is moued, so and a shreude womman; who holdith hir, as he caȝte a scorpioun." The Wycliffe Bible glossses this verse with a definition: "*a scorpioun*; that makith fair semelaunt with the face, and prickith with the tail; so a wickid womman drawith by flateryngis, and prickith til to deth, as Dalida dide to Sampson in xvij c^{o}. of Judicum" (3: 173). The *Ancrene Riwle* more specifically identifies the scorpion with the sting of carnal pleasure, listing the scorpion of lechery in its catalogue of the seven deadly sins. In an interpretation clearly indebted to the reference in Ecclesiasticus, the *Riwle* explains:

> . . . whi Leccherie is likned to þe scorpioun Loo here þe skille. Þe scorpioun is a worme þat haþ sumdel þe heued likned to womman. and nedder it is bihynden and makeþ fair semblaunt & fikeleþ wiþ þe heued and styngeþ wiþ þe tayl. . . .
> Qui apprehendit mulierem est quasi qui apprehendit scorpionem. (Who so takeþ a womman on honde he takeþ as he toke a scorpioun þat wolde styngen hym.) Þis leccherie is þat deuels best. . . . [1]

The link between lustful practices and the scorpion's sting suggests an obscene pun in the Merchant's "tail" which is reinforced by its proximity to the exclamation, "O swete venym queynte!"[2] and through the growing implication that the "wicked woman" particular to this story is not only Fortune, but the "fresshe May" herself.

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[1] A. Zettersten, ed., *The English Text of the Ancrene Riwle* 95. All other manuscripts of the *Ancrene Riwle* contain a similar passage.

[2] Paull F. Baum writes that the double meaning in these lines is unmistakable (243).

In words which can easily suit the adulterous May, the Merchant condemns Fortune as a monster who covers her deception with promises of steadfastness. May panders to her husband's jealous self-interest, flattering him with protestations of fidelity before his humiliating betrayal. Her insincere blandishments disguise a scorpion's sting:

> I prey to God that nevere dawe the day
> That I ne sterve, as foule as womman may,
> If evere I do unto my kyn that shame,
> Or elles I empeyre so my name,
> That I be fals. (MerT 165; IV.2195-99)

Like the scorpion, however, she soon stings him with her "tayl," although the destruction caused by her venomous "queynte" is not restricted to the arboreal exploits which make her husband a cuckold. The scorpion sting depriving January of his sight alludes both to the instability of earthly joy and to the more concrete effects of his carnal appetites, for medieval doctors caution that excessive coitus leads to blindness and eventual death. The Merchant may despise January for his senile lustfulness, but in this passage he equally condemns May as the agent of her husband's disability. The identification of Fortune with the scorpion and consequently with May leads to a causal relationship between the stinging tail and January's sudden blindness, a relationship which receives further emphasis through the context of the Merchant's lament. Occupying a privileged position by initiating the domestic drama's final act, the Merchant's mocking apostrophe to the Goddess Fortuna immediately follows his voyeuristic report of January's activities in his enclosed garden:

> In somer seson, thider wolde he go,
> And May his wyf, and no wight but they two;
> And thynges whiche that were nat doon abedde,
> He in the gardyn parfourned hem and spedde.
> (MerT 164; IV.2048-52)

This narrative connection with the garden of love augments the suggestive diction in extending the image of the scorpion to the illicit sexuality attributed to the wicked woman of the scriptures.

Although the female escapes sexuality's debilitating effects because she possesses a cold, moist constitution, sexual congress with her seriously depletes the male animal's vital heat and moisture. In his study of the history of sexuality, Foucault explains the classical belief that each seminal emission diminishes the entire organism:

> The sexual act extracted from the body a substance that was capable of imparting life, but only because it was itself tied to the existence of the individual and claimed a portion of that existence. By expelling their semen, living creatures did not just evacuate a surplus fluid, they deprived themselves of elements that were valuable for their own existence. (2.130)

Commenting on Aristotle's observation that salacious males die sooner than their more temperate brothers, Averroës writes:

> . . . causa vitæ est calida & humiditas & ideo complexio iuuenum est calida humida, & senum frigidida & sicca. Et signum eius est quem, qui multum coeunt, parum viuunt: & castrati plus viuunt quam non castrati.
> [. . . the cause of life is heat and moisture, and thus the complexion of youths is hot and moist and

> that of old people is cold and dry. And the proof of this is that those who engage in frequent intercourse live less long, and those who are castrated live longer than those who are not.] (De long. vitæ 148r; ch. 3)[3]

Instructed by Greek masters whose own reticence became magnified in Islamic translations and commentaries which emphasized the virtues of sexual moderation, medieval physicians and philosophers depict sexual union as a necessary and deceptively pleasant danger. For example, in enumerating the harmful effects of coitus, Constantinus Africanus refers to Galen's teachings as transmitted by his Arab sources:

> Galen says the same thing in his book on semen, when he speaks of those who have intercourse too often: not only does a humour come from the organs, but the vital spirit also leaves with the semen through the arteries. So it is hardly surprising that someone who has intercourse too often will be weakened. For when the body is drained of these two substances, and lustful man thinks only of pleasure, the vital spirit is dissipated; many have died in this way, and no wonder. Galen shows that when any animal has intercourse too often it soon dies, but will live longer than usual if it has intercourse rarely. (De Coitu 61)

Not all the sexually incontinent die outright from their excesses. When natural moisture and vital spirit become sufficiently depleted, blindness results, for the eyes, the brain and the genital secretions are closely connected. The loss of sight is both a warning that the body has become overtaxed, and a harbinger of imminent death should the reckless behaviour continue.

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[3] Aristotle's original comment states: "Quapropter salacia & multi seminis senescunt cito semen enim excrementum & amplius exsicat emissum. Et propter hoc mulus est longioris vitæ equo & asino, ex quibus genitus est: & fœminæ maribus, si salaces sint mares. Quapropter & passeres masculi breuioris vitæ fœminis."

[This is why those who are salacious and those who produce much semen grow old quickly. The semen is a residue, and its emission causes dryness. And because of this the mule lives longer than the horse or the ass from which it is generated, and females live longer than males, if the males are salacious. This is why male sparrows have a shorter life than females.] (De long. vitæ 146r; ch. 3)

Through comments not found in any of the sources or analogues to the tale, Chaucer carefully establishes that although January had remained "wyflees" for sixty years, he had certainly not pursued celibacy, following "his bodily delyt / On wommen, ther as was his appetyt . . ." (MerT 154; IV.1249-50). Having decided to marry, January emphasizes his interest in the carnal aspect of conjugal relations, declaring that abstinence or even temperance within marriage holds little attraction for one who feels his "lymes stark and suffisaunt / To do al that a man bilongeth to" (MerT 156; IV.1458-59):

> If he ne may nat lyven chaast his lyf
> Take hym a wyf with greet devocioun,
> By cause of leveful procreacioun
> Of children to th'onour of God above,
> And nat oonly for paramour or love;
> And for they sholde leccherye eschue,
> And yelde hir dette whan that it is due;
> Or for that ech of hem sholde helpen oother
> In meschief, as a suster shal the brother,
> And lyve in chastitee ful holily.
> But sires, by youre leve, that am nat I.
> (MerT 156; IV.1446-56)

Although he piously intends children as part of the joys of wedlock, January clearly focuses on the pleasure involved in their begetting. According to his philosophy, the elderly man should "take a yong wyf and a feir, / On which he myghte engendren hym an heir" (MerT 154; IV.1271-72). Far from delighting in the maturity of a woman even half his age, he reasons that only a "yong thyng" (MerT 156; IV.1429) will satisfy his desire:

> I wol noon oold wyf han right for this cause.
> For if so were I hadde swich myschaunce
> That I in hire ne koude han no plesaunce,
> Thanne sholde I lede my lyf in avoutrye
> And go streight to the devel whan I dye.
> Ne children sholde I none upon hire geten.
> (MerT 156; IV.1432-37)

While the blind husband of the analogues is jealous of his wife's affections, nowhere does he evidence the lascivious nature attributed to January. Having indulged in salacious fantasies about the young woman who will become his bride, January congratulates himself on his physical stamina as well as his sexual prowess. Seated at the wedding feast, he pities the innocent May:

> Allas! O tendre creature
> Now wolde God ye myghte wel endure
> Al my corage, it is so sharp and keene!
> (MerT 160; IV.1758-59)

Nor does his ardor abate after the exertions of the honeymoon, for lust forms the basis of every encounter between the old lecher and his young wife. When she returns to court on the fourth day after her marriage, January sends her on the fateful visit to Damian with the demand that she return quickly to his side in the matrimonial bed (MerT 162; IV.1926-27). Moreover, January's garden represents the setting for frequent conjugal delights: "And whan he wolde paye his wyf hir dette / In somer seson, thider wolde he go" (MerT 164; IV.2048-49). Boasting, "I feele me nowhere hoor but on myn heed" (MerT 157; IV.1464), January declares his resolute intention to ignore chronological age.

Because the analogues to "The Merchant's Tale" devote little space to the psychology of the deceived husband, neither his lecherous history nor his present lasciviousness receive any attention. In addition, although other renditions of the story identify the husband as rich, none presents him as old. Unique in emphasizing both January's advanced years and life-long lustfulness, Chaucer provides physiological clues that explain the blindness which occurs without comment in most other treatments of the story.[4] January suffers from old age and the deleterious effects of excessive sexual activity, each of which, according to medical wisdom, can precipitate a loss of vision.

In a moral lesson which appears to be lost on the old knight of "The Merchant's Tale," Albert the Great details the effects of carnal overindulgence on both the eyes and the brain:

> Et quidem narravit mihi magister Clemens de Bohemia, quod quidam monachus griseus accessit ad quandam dominam pulchram et sicut famelicus homo eam ante pulsam matutinarum expetivit sexaginta sex vicibus, in crastino decubuit et mortuus est eadem die. Et quia fuit nobilis, apertum fuit corpus eis, et repertum est cerebrum totum evacuatum, ita quod nihil de ipso mansit nisi ad

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[4] See Benson and Andersson 204-05:
Adolphus's "The Blind Man and His Wife" (1315): blind at outset; no mention of age.
"A Rich Man and His Wife" (Italian Novellino, 1280): blind through malady; no mention of age.
"About a Blind Man" (German, 1460-80): blind at outset; no mention of age.

> quantitatem pomi granati, et oculi similiter annihilati.
> [And indeed my teacher Clement of Bohemia told me that a certain grey monk approached a certain beautiful lady, and like a famished man he sought her sixty-six times before matins was rung. He collapsed in the morning and died the same day. And because he was noble his body was opened up and his whole brain was found to be emptied so that nothing remained except for amount the size of a pomegranate, and his eyes were similarly shrunken.]
> (Questiones super de animalibus 268; bk. XV, qu. 14)

A legacy from classical medicine, this intricate connection between brain, eyes and semen permeates all medieval explorations of the source of sperm, even though some controversy exists as to whether semen is collected from the entire body or only certain parts. Hippocrates teaches that although the whole body contributes to the manufacture of sperm, the brain constitutes the main source. In On the Nature of the Child, his tract dealing with human reproduction, he describes how the foamy sperm passes through the body to the testicles: "This humour is diffused from the brain into the loins and the whole body, but in particular into the spinal marrow: for passages extend into this from the whole body, which enable the humour to pass to and from the spinal marrow" (2). Connected to the brain and extending the length of the body to the members of generation, the spinal cord contains cerebral matter which provides a major component of sperm. Hippocrates proves this affinity by observing that "those who have had an incision made by the ear, can indeed have intercourse and emit sperm, but the amount is small, weak and sterile. For the greater part of the sperm travels from the head past the ears into the spinal marrow: now when the incision has formed a scar, this passage becomes obstructed" (2).

Following Hippocrates, Aristotle states that "natura geniture similis est ei que cerebri . . . " [the nature of the genital secretions is similar to that of the brain. . .] (De gen. an. 78; bk II, ch. VII), explaining that specific veins carry seminal matter from the brain to the testicles:

> Sunt item quae de utraque proferantur ad testes, per dorsi medullam tenues: atque etiam aliae quae subditæ cuti tendabt per carnem ad renes, cessentque ad testes viris, ad vterum mulieribus . . . quae seminariæ nominatur.
> [There are also two other delicate veins running on each side (of the neck) through the spinal marrow, which are directed to the testicles. There is another pair which are called the seminal veins running a little under the skin through the flesh to the genital regions, terminating at the testicles in men and at the uterus in women].
> (De hist. an. 22r-22v; bk III, ch. II)

He offers as proof that the brain becomes diminished by intercourse the observation that eunuchs do not become bald because they have a large amount of cerebral matter with abundant moisture to stimulate hair growth. Their success in preserving this vital substance stems from their inability to ejaculate:

> Cur spadones calui effici nequeant? An eo quam multum cerebri obtinent: quod sanè his contingit, quia rem veneream non agunt: semen enim labi per spinam ex cerebro videtur.
> [Why is it that eunuchs cannot become bald? Is it because they have a great deal of cerebral matter and this surely happens because of their inability to have intercourse: for it is seen that the semen flows through the spine from the brain.]
> (Prob. 34v; bk. X, no. 56)

In his discussion of the formation of the embryo, he explains the congruence of eyes and brain:

> . . . sed ab humiditate que circa cerebrum segregatur purissimum per poros, qui videntur ferentes ab ipsis ad miningam eam que circa cerebrum. Huius autem argumentum: neque enim alia particula humida et frigida est in capite preter cerebrum, oculusque frigidus et humidus.
> [. . . but the purest fluid around the brain is carried away through the ducts which are visible running from the eyes to the membrane around the brain. A proof of this is that there are no other moist, cold parts in the head except the brain and the cool, moist eyes.]
> (De gen. an. 71; bk. II, ch. I)

Through this affinity with the brain, the eyes maintain a close relationship to semen:

> Circa oculos enim porus eorum que circa caput maxime spermaticus est. Declarat autem in coitibus transformatus manifeste solus, et utentibus pluribus venereis operibus deprimuntur oculi manifeste.
> [The passage around the eyes is the most closely connected to the sperm of any of the passages which go around the head. This is abundantly clear in that in sexual intercourse it alone is changed and the eyes are clearly sunken in after too much intercourse.]
> (De gen. an. 78; bk. II, ch. VIII)

In the Problems, the query, "Qvam ob causam, qui concombit, & qui moritur, oculos attolit: qui autem dormit, submittit?" [Why is it that he who engages in sexual intercourse and he who is dying raises up the eyes, while he who is sleeping lowers them?] elicits the explanation "Clauduntur vero propterea oculi, qua humiditas deficit" [Truthfully, the eyes close because they lack moisture] (Prob. 16r; bk. IV, qu. 1). The answer to the next question further elucidates the close connection between the eyes and sexual activity. Commenting on his statement that the eyes in those who are sexually intemperate sink very noticeably,[5] Aristotle writes,

> Oculi autem, partesque sedi proximæ perspicue collaborant, haud enim fieri potest, vt semen perfluat, nisi partes coagantur illæ, nisique oculi demittantur: quippe cum partibus his coeuntibus, humour quasi manu ex vesica prematur, oculisque coactis cerebrum sua dimittat. Oculos vero, & locum his proximum, vim ad procrationem maximam obtinere docent illinimenta, quæ mulieres tam steriles, quaeque fœcundæ experiuntur, vtpote cum vis ad semen transmitti hinc debeat. [Therefore the eyes and the parts around the buttocks are in close collaboration, for it is not possible to emit semen unless these parts work together and unless the eyes are shut: for when these parts are contracted, just as liquid can be expelled from a bladder by hand, the eyelids, being brought together, press out the moisture from the brain. Truthfully, that the eyes and the parts around them are most important in procreation is illustrated by the fact that both sterile and fertile women experiment with annointing their eyes so that the strength must be transmitted to the semen in this way.]
> (Prob. 16r; bk. IV, qu. 2)

In the final question dealing with sight and sex, Aristotle confirms the belief that coitus dimishes vision by referring to the dessication attendant upon sexual activity. Intercourse causes the eyes to dry out, thereby forfeiting much of their acuteness:

> Quam ob rem & qui concumbunt, & spadones, qui re minime vtuntur venerea, in acumine oculorum offenduntur? An quam alteris ob libidinem, alteris ob excisionem partes superiores plus iusto exiccantur: quod perspicuum in iis est, quorum opus exquisitius administratur, aspectus autem tale est.

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[5] "Cur iis, qui rem veneream immodice agunt, oculi & clunes manifeste subsident, partes quarum alteræ propre, alteræ procul a genitalibus absunt?" [Why do the eyes and haunches of those who engage in excessive sexual intercourse shrink noticeably, though the latter are near and the former far from the genitals?]

> [Why is it that those who are sexually active and eunuchs who never have sex both lose their sharpness of vision? Is it that in the former because of their desire and the latter because of their excision, the upper parts become drier than usual, and this is most easily seen in those organs which perform delicate work, such as the eye?] (Prob. 16r; bk. IV, qu. 3)

Galen greatly expands Hippocratic and Aristotelian descriptions of the relationship between eyes and genitals, observing from his anatomical dissections that large, soft nerves from the encephalon (the brain, spinal cord and the nervous system) extend into the eye. Castigating Aristotle for suggesting that not all instruments of the senses unite with the encephalon, Galen questions:

> Porro in utrumque oculum nonne unus quidem mollis nervus, unus item durus, quorum alter quidem in radicum ipsius, alter vero in musculos moventes inseritur?
> [Surely a single soft nerve and a single hard one come to each eye, the one of which is inserted into the root of the eye and the other into the muscles of movement?]
> (De usu 623; bk. VIII, ch. III)

The soft nerve particularly links the eye with the cerebral matter because it surrounds the vitreous humour, ultimately connecting with the lens itself:

> . . . atque etiam quod in utrumque ipsorum productiones a cerebro immittuntur, quae, dum per ipsa quidem ossa transeunt, compinguntur ac densantur, quo essent ab injuriis tutiores, quum autem ad oculos ipsos pervenerint, solutae denuo atque amplificatae in orbemque instar tunicae humourem vitreum complexae in humourem crystallinum inseruntur.
> [. . . moreover, to each eye there extends from the encephalon an outgrowth which is compressed where it passes through the bones in order to make it resistant to injury, but which upon reaching the eyes themselves is resolved again, flattens

> out, embraces the vitreous humour like a tunic and is inserted into the crystalline humour.]
> (De usu 760; bk. X, ch. 1)[6]

As the chief instrument of vision, the crystalline humour or lens must receive quality nourishment from the body. Because blood in an unrefined state will not suffice to feed this radiant humour, the body forms an intermediary, the vitreous humour which moistens and nourishes the delicate lens. This specialized humour, or white of the eye, derives its sustenance from the encephalon itself, being of similar constitution (De usu 759-62; bk. X, ch. 1). Most blindness results from a hardening of the crystalline humour:

> . . . affectumque, qui a medicis glaucosis (glaucedo) nuncupatur, siccitatem quidem esse ac concretionem immodicam humouris crystallini, et caecitatem prae omnibus maxime, qui oculis accidunt, morbis inferre. . . .
> [. . . and the affection called glaucosis by doctors is excessive dryness and solidification of the crystalline humour, causing blindness more than any other disease of the eye. . . .]
> (De usu 786; bk. X, ch. 6)

The dessication concurrent with old age dries all parts of the eye, including the important vitreous humour. With its source of nourishment impaired, the lens solidifies and darkens until sight diminishes. Aristotle similarly connects loss of moisture with loss of vision. Blue eyes composed of less watery humour than dark do not enjoy keen sight by day:

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[6] Eadem porro ratio est in nervis oculorum: duri quidem in ipsorum musculos inferuntur, alii vero in primum et principalissimum visus instrumentum, humorem scilicet crystallinum. [So too the hard nerves of the eyes are inserted into the muscles, the other truly into the first and most important instrument of vision, that is the crystalline humour.] (De usu 635; bk. X, ch. 1)

> Glauci quidem enim propter paucitatem humidi moventur magis a lumine et visibilibus, in quantum humidum et in quantum diafanum. . . . Nigri autem oculi propter multitudinem humidi minus moventur. [Blue eyes, because there is little liquid in them, are moved too greatly by light and visible objects in relationship to the quantity of moisture and the quantity of transparency. . . . Dark eyes are less moved because of the great amount of moisture in them.]
> (De gen. an. 158; bk. V, ch. I)

The loss of sight caused by cataracts, especially prevalent in the aged, is explained by the theory that moisture in the eye allows vision and the lack of humidity leads to blindness:

> Est autem glaucedo quidem siccitas quedam magis oculorum, propter quod et accidit magis senescentibus: desiccantur enim, quemadmodum et aliud corpus, et hee particule ad senectutem. . . .
> [Cataract (glaucoma) is really a sort of great dryness of the eyes; therefore it is found more in the elderly. These particular parts dry out just as the rest of the body dries as it grows old.]
> (De gen. an. 158-59; bk. V, ch. I)

Sexual activity similarly reduces the body's moisture, especially in those parts demonstrating a constitutional affinity to semen, for the pure, refined seminal humour seeks as its source primarily humours similar to itself. Connected to the genitals by long ducts along the spinal column, the subtle matter of brain and eyes easily becomes depleted from excessive coition. Too much sex further dims the vision of those in advancing years who already experience the natural dessication of the body.

The entire encephalon including brain and eyes further differs from other bodily organs by its plenitude of *pneuma*, or *spiritus* in Latin, the mysterious life-imbuing breath which permeates all living organisms. Because the sense of sight depends heavily on sufficient *spiritus* in the eye, sexual activity which depletes this essential ingredient in addition to necessary moisture is doubly harmful. Originally denoting both air and wind, the word *spiritus* evolves in medical writings to describe the complex merging of the material substance of air with the body's vital force, incorporating as well the concept of innate heat.[7] Bartholomaeus identifies *spiritus* as a "sotille spiritual substance and aery kind," commenting:

> And þat is iclepid *spiritus* [*naturalis*], for kindeliche by þe myȝt þerof he makeþ þe blood sotile, and by liȝtnes þerof he meueþ þe blood and sendiþ it aboute into alle þe lymes. And þerfore þis spirit properliche reuliþ and gouernyth þe kinde vertu of lif. (Trevisa 1: 122)

Although he mentions three separate varieties of *spiritus*, Galen stresses mainly two kinds, that which is carried to all organs by the arterial blood and that which permeates only the brain and nervous tissue, including the bone marrow and the spinal cord. Essential to maintaining life, the vital *spiritus* which infuses the whole body differs in both production and purpose from the cerebral

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[7] In "Medical Spirits and the Medieval Language of Life," James J. Bono traces the evolution of the term *spiritus* from its simple denotation in Greek medicine to its far more complex meaning in the medicine and philosophy of the Middle Ages.

spiritus which specifically carries messages relating to nervous and mental activity. Bartholomaeus likewise divides _spiritus naturalis_ into two distinct varieties. Maintaining life in all parts of the body, the _spiritus vitalis_ originates in the heart whereas the brain manufactures _spiritus animalis_:

> For out of a denne of þe lift side of þe herte comeþ a veyne and in is meuynge is departid in tweye braunches. Þe on þerof goþ donward and sprediþ in many bowes and sprayes by þe whiche þe spirit _vitalis_ "of lif" is ibrouȝt to ȝeue þe lif to alle þe neþir lymes of þe body. Þe oþir bow goþ vpward and is departid in þre braunches. Þe riȝt bow þerof goþ to þe riȝt arme and þe lift bowe to þe lift arme and sprediþ in diuers sprayes. And so þe spirit _vitalis_ is isprad into al þe body and makeþ þe veynes þe puls of lif. Þe middil bouȝ strecchiþ to þe brayn and ȝeueþ lif to þe ou[er] parties and sprediþ þe spirit _vitalis_ in all þe parties aboute. Þe same spirit perischiþ and passiþ furþere to þe dennes of þe brayn and þere he is iruled and imade sotile and bicomes _spiritus animalis_. And þis spirit is so ichaungid, it is more sotile þan the oþir.

Denying that the _spiritus animalis_ equates with man's soul, the _De proprietatibus rerum_ nevertheless assigns it the important task of its medium:

> We schal nouȝt trowe þat þis spirit is many[s] resonable soule, but more soþely þe chare þerof and cariage and propre instrument. For be suche a spirit þe soule is ioyned to þe body, and wiþoute the seruice of suche a spirit þe soule vsiþ no parfait worchinge in þe body. (Trevisa 1: 122-23)

This spirit travels via the backbone to the various parts of the body (Trevisa 1: 261).

Comparison with Galen's explanation of the creation of _spiritus_ shows that the account in the _De proprietatibus rerum_ adheres to concepts transmitted from ancient medicine.

According to Galen, air drawn in by the lungs begins its transformation into spiritus in the tissues of the lungs themselves, in a procedure analagous to the three digestions of food. The second stage takes place in the heart and arterial system where the manufacture of vital spiritus terminates. A small amount of this vapour completes its final distillation in the cavities of the brain, where it becomes cerebral spiritus. Galen explains:

> Caeterum spiritus, qui ab asperis arteriis extrinsecus trahitur, in pulmonis quidem carne primam elaborationem fortitur, postea vero in corde atque arteriis, et iis maxime, quae in plexu sunt retiformi, ultimam ac perfectissimam in cerebri ventriculis, ubi utique et animalis primum exacte efficitur.
> [This spiritus which as outer air is drawn in by the windpipe, receives its first elaboration in the flesh of the lungs, its second, truly, in the heart and arteries mostly those of the retriform plexis and its most perfect one in the ventricles of the brain, where its transformation into cerebral spiritus is effected.]
> (De usu 541-42; bk. VII, ch. 8)

Essential to Galen's theory of the life-giving spiritus, the retriform plexis, or rete mirabile, describes a conglomeration of many tiny arterial and venous blood vessels where the blood flow seems to slow down almost to the point of stagnation. Located at the base of the brain, the spongelike retriform plexis defines the partially processed air coming from the lungs into a vital spirit.[8] Another plexis occurs in the cerebral ventricles where the vital _spiritus_ undergoes further purification into the specific vapour carried throughout the encephalon.

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[8] The retriform plexis is found in hooved animals but not in man. Galen's error originates in his use of the pig for internal anatomy. See May 47 and Siegal 188.

Of all sensory organs, the eye requires the largest amount of _spiritus_ to operate effectively, vision depending heavily on the action of this vapour within the structure of the eye. Explaining that large quantities of cerebral _spiritus_ are needed to fill the empty spaces of the eye socket as well as to enable the iris to open and close, Galen suggests an experiment to verify his belief:

> Quin et si alterum oculorum clauserimus alterum aperientes, amplificatam ac dilatatam et veluti inflatam pupillam intuebimur. Proinde non ratione modo constat, pupillam quidem spiritu refertam sic affici. . . .
> [Moreover, if we close one eye and keep the other open, we see that the pupil becomes dilated and expanded, as if it were inflated. Now reason makes evident that it is in this position because it is full of _spiritus_. . . .]
> (_De usu_ 782; bk. X, ch. 5)

In old age the supply of _spiritus_, like the supply of blood, diminishes for a variety of reasons. The lungs dry out, drawing in less air to be used as raw material,[9] the moisture in the brain lessens because of general dessication, and the soft, flexible nerves, conduits for _spiritus_, harden and narrow. Whereas drying and wrinkles of the transparent humours of the eye contribute to loss of vision in old age, Galen explains that a decrease in the amount of available spiritus constitutes the major cause of senile blindness:

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[9] See _De iuuentute_ 157v; ch. XIV. In old age, the lung becomes hard, dry and unable to draw in the necessary air. In his second book on the organs of respiration (bk. VII, ch. 1) Galen also describes the flexible, blood-filled lung necessary for adequate respiration. In old age the amount of blood decreases and the lung dries, a process which depletes the supply of _spiritus_ available.

> Quin et valde senibus cornea tunica interdum adeo fit rugosa, ut alii quidem prorsus nihil, alii ver male ac vix adhuc videant. Incidentibus enim aliis super alias rugis, tunicaque ob eam causam duplicata, crassitiemque acquisititiam assumente, spiritu praetera superne ad pupillam parcione affluente, proportione oculi iis impediuntur; ad ipsum enim, quod spiritus parcior a principio affluat, in causa potissimum est, ut pupilla corrugetur. Ex quibus omnibus intelligi potest, spatium omne, quod est post humorem crystallinum, spiritu simul et humore tenui assidue repleri; quodque in caeteris partibus humor, in ipsa vero potissimum pupilla spiritus inest plurimus. [Moreover in old people the cornea frequently becomes wrinkled so that some of them have no sight, others see poorly or with difficulty. When the wrinkles overlap each other, and for this reason the cornea is doubled in thickness, and when less spiritus flows into the pupil from above, the eyes are impaired proportionally. From this, then, (it is understood that) less spiritus flowing from the brain is the greatest cause of the wrinkling of the pupil. From all of this it can be understood that all the space behind the lens is filled with spiritus and a thin humour. In the rest of the eye the humour prevails, but most of the spiritus exists in the pupil itself.]
> (De usu 783-84; bk. X, ch. V)

The production of semen similarly requires an abundant source of spiritus to facilitate both erection and ejaculation. Frequent coitus therefore depletes the body's supply of this vital breath. January's eyesight is already endangered by virtue of his age, but according to medical teachings linking sex and spiritus, his excessive carnal appetite increases the likelihood of blindness. In discusssing the role of spiritus in male sexual performance, Aristotle notes the penis's unique ability to expand or decrease naturally. Observing that this tendency is necessary both to male comfort and to procreative activity, he describes the male member's capability of admitting and expelling spiritus:

> . . . augetur etiam, et minuitur hoc vnum membrum, sine vlla morbi mutatione. . . . Constat hoc membrum ex eiusmodi partibus, vt eorum, quam modo dixi, vtrunque possit euenire partim enim neruum, partim cartilaginem habet, itaque & contra hi potest & extendi, atque entflatus capex est. [This organ, again, is the only one that, independently of any morbid change, admits of augemntation and of diminution of bulk. . . . For it is partly sinewy, partly cartilaginous, and thus is enabled either to contract or to become extended, and is capable of being inflated.]
> (De part. an. 191v; bk. IV, ch. 10)

Aristotle attributes erection to pneumatic pressure, but he also explains that emission is impossible without sufficient spiritus: "Cum semen genitale exit, spiritus antecedit" [When semen is emitted from the genitals, it is preceded by air] (De hist. an. 76v; bk. VII, ch. VII).

Coitus draws on the body's reserves of spiritus for erection and propulsion, and the semen itself contains a great quantity, as Aristotle specifically states in his discussion of its foamy nature: "Est quidem igitur sperma commune spiritus et aque" [Sperm therefore is a mixture of breath and water] (De gen. an. 52; bk. II, ch. III). The spiritus carries with it intense vital heat which warms the cool moist seminal fluid, producing fertile sperm:

> . . . omnium quidem enim in spermate inexistit quod facit gonima esse spermata, vocatum calidum. Hoc autem non ignis neque talis virtus est, sed interceptus in spermate et in spumoso spiritus aliquis. . . .
> [. . . all animals have in their semen that which makes it fertile, called vital heat. This is not fire or any such force, but it is the spiritus

> included in the semen and that which is foamy. . . .] (De gen. an. 54; bk. II, ch. III)

Galen explains how, in a convoluted mass of veins and arteries, pure blood becomes refined into semen, receiving in the process a plenitude of cerebral spiritus from the arterial system (De usu, bk. XIV, ch. 10, pp. 183-84).[10] Seminal fluid which is hot and full of breath results:

> Ipsum autem semen spirituosum est ac spumosum, ut, si extra effusum aliquando fuerit, paulo post minutius multo appareat, quam quum initio excideret, desicceturque citissime prae viscositate, non quemadmodum mucus et pituita duitissime perdurant, neque siccantur, molemque aequalem servant; tenuis enim et aquosa ac cruda horum, crassa autem et viscosa et spiritu vitali plena ipsius seminis est humiditas.
> [This semen itself is full of spiritus and foamy, so that if it is sometimes emitted externally, there soon appears to be less of it than at first, because, when it is first emitted, it is dried up quickly because it is viscous and unlike mucus and phlegm it does not last for a long time or keep its original volume without evaporating. The moisture in these glandular bodies is thin, watery and unprocessed, whereas semen is thick, viscous and full of its vital spirit.]
> (De usu 183; bk. XIV, ch. 9)

In addition to dessicating the body's natural moisture, primarily that of the brain and eyes, the production and emission of semen depletes the supply of cerebral spiritus contained mainly in the members of the encephalon. Of all bodily organs, the eye holds the greatest amount of this vital breath necessary for adequate vision. Excessive sexuality saps this important component of sight, exacerbating the already deleterious effect of moisture loss. Not only do the stores of refined _spiritus_ diminish during coitus, but the raw materials of which _spiritus_ is concocted also disappear. For example, not only the cerebral _spiritus_, but the partially refined vascular _spiritus_ flows into the generative members to facilitate erection and to provide expulsive force. Given the physiological background, mental deterioration or at least blindness can be understood as a real danger to the sexually incontinent.

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[10] See my discussion of sperm production, Chapter 1.

Albert's cautionary tale points to the interdependence of brain, eye and semen as postulated by the Greek physicians. While admitting that semen originates in all parts of the body, Albert posits a special relationship between the encephalic system and the members of generation:

> Et ideo ab illis partibus magis derivatur sperma et maxime a cerebro, quia cerebrum est album et molle et humidum, et in hoc convenit cum substantia spermatis. . . . Et huius signum est, quod per superfluum coitum extenuatur cerebrum et profundantur oculi, qui conveniunt cum cerebro et debilitantur multum.
> [And thus sperm is derived generally from these parts and mostly from the brain which is white and soft and moist, and in these properties is like the substance of sperm. . . . And this is the proof, that through excessive coitus the brain is diminished and the eyes which are like the brain are also drained and greatly debilitated.] (_Questiones super de animalibus_ 268; bk. XV, qu. 14)

Sexual intercourse not only consumes cerebral matter and moisture, but also depletes the body's spiritus, "quod virtus animae emittitur cum spermate" [because the property of the spirit is emitted with the sperm] (_Questiones super de animalibus_ 267; bk. XV, qu. 13). Building on Aristotle's teaching, William of Conches lists spiritus as among the three necessary prerequisites to successful coition:

> . . . sunt illa tria necessaria: semen quod emittantur, calor, qui hominem accendit & qui semen eliciat . . . & spiritus qui virgam erigat & semen expellat.
> [. . . these three (qualities) are necessary: semen to be emitted, heat to inflame men and to bring out semen . . . and air to cause erection of the male member and to expel semen.] (237)

He continues his explanation of sexual union, linking the male genitalia with the sensory system: "sed quia neurosa est uirga, nerui vero sunt organa sensus" [but the penis is a nerve, and nerves are indeed organs of sense] (238). Later he proves that all sensory organs originate in the brain, being therefore replete with cerebral spiritus (326).[11]

The Speculum naturale contains a full range of opinions about the origin of semen, providing arguments both from those who contend that it derives from the brain and those who state that it is drawn from the whole body. After establishing that semen, produced in the fourth and final digestion, mingles with spiritus in the seminal plexis described by Galen, Vincent quotes Hippocrates's dictum that semen derives from the brain:

> Hippocrates ait, quod plurimum materies spermatis est a cerebro, & quod descendit ex duabus venis, quae sunt post ambas aures.
> [Hippocrates says that the material of sperm

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[11] Having cited Avicenna and Constantinus in defining semen as hot, moist and full of spiritus, Vincent of Beauvais quotes William of Conches's three requisites for intercourse (Spec. 2300; bk. XXXI, ch. X).

> mostly comes from the brain and descends by way of two veins which are behind both ears.]
> (Spec. 2300; bk. XXXI, ch. XI)

He then refers to William of Conches's view that semen comes from the whole body, but mainly from the brain, before concluding that

> . . . solutio omnia concordans, haec est, quod principaliter descendit ab hepate, ab omnibus autem membris originaliter, & a cerebro pro maiori parte.
> [. . . the solution that solves all the problems is that sperm which descends primarily from the liver originates in all members of the body, but mostly in the brain.]
> (Spec. 2301; bk. XXXI, ch.III)

Attempting to find a middle ground between the two positions, Vincent expresses his own opinion that both are correct in a limited way. While advocating the theory of pangenesis, he nevertheless accentuates the important role of the brain in the production of semen:

> Mihi vero videtur quod non oportet vt sperma sit ex cerebro solo, quamuis eius fermentum sit ex cerebro particulariter.
> [It truly seems to me that it is not reasonable that sperm originates only in the brain, although its processing is particularly in the brain.]
> (Spec. 2300; bk. XXXI, ch. XI)

Following his medical sources, Vincent further links cerebral matter to the physiology of the eye:

> Oculi sunt pars corporis preciosissima. Nullumque in eo membrum est frigidum & humidum nisi oculi & cerebrum.
> [Eyes are the most precious part of the body. None of its members are cold and moist except the eyes and the brain.]
> (Spec. 2023; bk. XXVIII, ch. XLVII)

Quoting Avicenna's Canon, he explains that cerebral matter and spiritus descend to the eye through two nerves:

> Virtus autem visus & materia spiritus visibilis a cerebro procedit ad locum per viam duorum neruorum concauorum. . . .
> [But the virtue of sight and the *spiritus* providing the material for vision proceeds from the brain to that location (i.e., the eye) by way of two concave nerves. . . .]
> (*Spec*. 2024; bk. XXVIII, ch. XLVIII)

Although Vincent refrains from providing the kind of moral exemplum given by Albert, according to his view of anatomy the brain, eyes and members of generation share both substance and *spiritus*.

The *De proprietatibus rerum* similarly identifies the brain as the source of cerebral *spiritus*, describing the *animalis motiva* which "haþ place in þe smale chambres of þe brayn" as responsible for both mechanical and nervous movement. A refinement of the *spiritus vitalis*, the vital breath produced in the lungs, heart and arterial system, this animating virtue permeates the brain and its extensions such as bone marrow and nerve sheathes, thus allowing motion and sensation (Trevisa 1: 99).[12] Especially charged with this *spiritus*, the eyes function as organs of sight by the efficient cause of "þe virtue þat hatte animalis" (Trevisa 1: 108).

Having described various opinions on the mechanics of sight, Bartholomaeus repeats Aristotle's explanation for diminishing sight in old age: "Also þe siȝt of olde men is noȝt sharp, for here skinnes beþ riveled. And so þe vertu of þe siȝt is feble oþir strong by goodnes oþir feblenesse of þe lyme" (Trevisa 1: 112). Likening the lens of the eye to the skin, he follows his authorities in connecting the corporeal dessication causing wrinkles to the dryness of the organs of vision in old age. The cornea clouds up because it folds over upon itself, thickening the barrier and darkening sight. Linked to the brain and hence the eyes through the spinal cord, semen draws on both cerebral matter and spiritus in its production: "þese stones serueþ þe pipe and ȝeueþ it sede, and fongiþ þe seed of þe mary and marouȝ oþ þe riggebone" (Trevisa 1: 261).

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[12] See also Trevisa 1. 104-08.

In delineating the causes of blindness, Bartholomaeus explicitly connects the eyes with sexual activity, explaining that too frequent coitus depletes both moisture and spiritus. He writes that blindness can be caused by both outward injuries and by inward malfunctions, including ". . . fleischlich likinge and ofte seruyse of venus þat corrumpiþ and dissolueþ þe spiritis and þe humour cristallyne" (Trevisa 1: 360). Later he demonstrates how this process resembles the deterioration of sight endemic among the elderly. Men are deprived of their sight through various physiological changes such as the "consumpcioun and wastinge of humours and of spiritis, as it fareþ in olde men" (Trevisa 1: 364).

Although the debate about the production of sperm divides medieval writers into opposing camps, one of which posits a cerebral origin and the other which concludes that semen derives from the whole body through the concoction of blood, both schools of thought assign immense importance to the encephalon.[13] Even proponents of pangenesis argue that the seminal humour originating in the various parts of the body eventually received final processing in the chambers of the brain. All medical authorities agree that the brain, eyes and genitalia form different parts of the same system, sharing both matter and spirit. Like his ancient authorities as well as his medieval contemporaries, Bartholomaeus contends that both increasing age and excessive sexual indulgence lead to blindness; the chances of such a calamity certainly increase when the two factors are combined, as they are in January's case.

2. Medicine and January's Precautions

Belying his boast that "Myn herte and alle my lymes been as grene / As laurer thurgh the yeer is for to sene" (MerT 157; IV.1465-66), January's painstaking attempts to conserve vital heat and moisture by drinking warm, spiced wine before a night of sexual expenditure demonstrates his awareness of medical explanations for elde. Medical authorities agree that, constitutionally, old age comprises cold, dry humours, the body's natural heat and humidity having been depleted over a long life-span.[14] All members of the body depend on warmth created and maintained in the heart, according to Aristotle's teachings:

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[13] Jacquart and Thomasset summarize the medieval debate over the nature of sperm in Sexuality and Medicine 52-56.

[14] See my discussion of old age in "The Reeve's Prologue," Chapter 1.

> Quapropter aliis quidem partibus infrigidatis remanet vita, eo autem qui in hoc, corrumpitur omnino, quia hinc principium omnibus dependet caliditatis, & anima tanquam ignita in his particulis, exanguium quidem in proportionali, in corde autem sanguine præditorum. Necesse est igitur simul vitam existere & calidi huius conservationem & vocatam mortem esse huius corruptionem.
> [For this reason life remains although the other parts (of the body) become cold, but when this organ (the heart) becomes cold, all the parts die because the principle of heat of all the parts depends upon this part, and the soul is, at it were, ignited in this part which in animals possessing blood is the heart and in bloodless animals is the similar organ. Therefore the conclusion is unavoidable that life exists simultaneously with the conservation of heat, and what is called death is the corruption of heat.]
> (De iuuentute 150v; ch. II)

This heat, allotted at birth to each individual, derives its nourishment from the smooth, fat moisture inherent in the body (Prob. 11v-12r; bk. III, qu. 5). Although partially determined by nature, the radical moisture may be replenished to some degree by ingesting certain foods, just as bodily heat can be augmented by that which warms the digestion.

In response to the question "Utrum senectus possit retardari" [whether old age can be delayed], Albert the Great explains that old age consists of two aspects, the accidental and the natural. The accidents or accompanying signs of advancing years can be postponed, even reversed for a time, but the natural causes cannot be overcome:

> Alia est senectus naturalis, quae provenit ex inanitione calidi naturalis et consumptione humidi radicalis, et talis potest retardari, sed non evitari. . . .
> [The other is the natural cause of old age which

> proceeds from the diminishing of natural heat and the consumption of vital moisture, and this may be retarded but not avoided. . . .]
> (Questiones super de animalibus 185; bk. VII, qu. 30)

Advice for the preservation of youth concentrates on warming, moisturizing measures which can retard the symptoms of old age. For example, Avicenna states categorically that "the management of health preservation for old persons briefly consists of moistening and warming measures" (Gen. Prin. 338), counsel which permeates treatises such as Maimonides's tract on the Preservation of Youth and Roger Bacon's work on retarding the symptoms of old age. Maimonides suggests that the regulation of health in the elderly consists, in part, of the consumption of warming and moistening foods as well as mild, warming exercises and bathing in warm water (Aphorisms 2: 46). Having defined old age as proceeding from the diminution of innate heat which depends on intrinsic moisture,[15] Bacon proceeds to discuss foods and activities restorative to these vital constitutional components.

Central to all dietetic regimens for the elderly, red wine comprises ideal qualities for the renewal of heat and warmth. Identifying grapes as hot and moist in the first degree (Gen. Prin. 432), Avicenna recommends old red wines for the elderly, for they both moisten and increase heat in the body (Gen. Prin. 340). Even though Maimonides writes primarily for a Moslem audience, he observes:

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[15] Sed senectus et senii accidentia proveniunt ex debilitate caloris naturalis, et debilitas caloris naturalis provenit ex dissolutione naturalis humiditatis et augmento extranee. [But the symptoms of old age and senility proceed from the diminution of natural heat, and the diminution of natural heat proceeds from the dissolution of natural moisture and the augmentation of extraneous moisture.] (Bacon 6)

> Just as wine is extremely damaging to young people, to the elderly it is extremely beneficial. For them the most salutary of these wines are those which are particularly warming and markedly thin, and which have a red or yellowish appearance. (Aphorisms 2: 46)

In a later section he explains that wine forms a recommended part of the diet for both the sick and the elderly:

> We possess nothing more appropriate than wine for strengthening one who is weak and enfeebled. The same applies to one whose body is completely cooled. (Aphorisms 2: 68)

Bacon concurs, placing wine above beer in that it facilitates the generation of blood and spiritus by bolstering the body's natural heat and moisture. In a section which seems to be indebted to Avicenna's Canon, the Franciscan offers nutritional advice to his elderly readers:

> Sed carnes et vinum et vitella ouorum sunt magis propinqua in generatione sanguis quam alia, quia senes indigent restauratione sanguinis et spiritus, et summa regiminis eorum est illud quod calefacit et humectat ex nutrientibus. . . . [But flesh and wine and egg yolk are more suitable than other things in the generation of blood because the elderly need the blood and the spiritus restored, and the basis of all of their regimens are those things which warm and moisten by means of their nutrition. . . .] (37)[16]

Having referred to Avicenna's regimen of warmth and moisture in the treatment of old age, the Speculum quotes

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[16] Avicenna's original advice to his elderly patients similarly suggests meat, egg yolk and aromatic wine for easy digestion and restorative properties (Canon 325r; bk. IV, fen I, tr. III, ch. XI).

Rhazes in advocating that "vinum porro temperatæ naturæ, clarum, ac subtile, mediocriter aqua mixtum bibent, ac temperate sumant" [in moderation they should drink moderately strong wine, clear and thin, mixed with a little water] (Spec. 2362; bk. XXXI, ch. LXXXIX). Although he neglects to specify the rationale for administering wine to the elderly, its restorative powers clarified in his general section on the properties of wine render the explanation obvious. In citation after citation, the Speculum mentions wine's ability to warm and moisten the body. Isaac Judæicus, for example, represents the opinions of such authorities as Dioscorides, Constantinus and Avicenna:

> Nec vllus inuenitur cibus vel potus adeo naturalis caloris confortatiuus & augmentatiuus sicut vinum, propter familiaritatis confortium quod habet cum natura: & quia calor eius similis est naturali calori: citoque conuertitur in naturalem & mundissimum sanguinem. . . . vt decrepitis autem licèt optimum videatur ad confortandum corpora eorum, & augmentandum calorem naturalem. [There is no food or drink found whose natural warmth is as strengthening and fortifying as wine because of its intimate connection with strenghthening and because its heat is like natural heat. Because of this it is converted quickly into natural and plentiful blood. . . . they agree that it seems best for the decrepit (to drink wine) in order to strengthen their bodies and augment the natural heat.]
>
> (Spec. 1076; bk. XIV, ch. CXII)

Constitutionally cold and dry, elde benefits from the inherent warmth in wine augmented by its ability to fortify the blood supply. Because they share the physiological deficiencies associated with age, the physically active can expect similar salutary results from moderate imbibing. For example, Vincent quotes Dioscorides in linking wine with coitus: "Vena recentia vetustis calidora sunt & venerem procurant" [New wines are warmer than old and promote sexual intercourse] (*Spec*. 1078; bk. XIV, ch. CXVII).

Intense heat which concocts the semen necessarily precedes any sexual activity, but sufficient *spiritus* must also be available, for sperm comprises *spiritus* and moisture. In addition, by facilitating tumescence, "windiness" accounts for the physical ability to have intercourse. A rich source of natural heat, wine also contains exceptional quantities of *spiritus*, as Aristotle explains:

> . . . vinum vere flatus mouere nimirum potest quam ob rem similem ambo istæc fortiuntur naturam, atra bilis, & vinum. Constat vinum eam habere vim è spuma, quam excitat, oleum enim quamuis calidum, nihil spumat: vinum large, ampliusque nigrum, quam album, quia calidius corpulentius est. Vnde sit, vt cupiditatem Veneris accendere vinum possit quare non inepte Vererem iunctam Baccho autumant. [. . . truly wine has the quality of containing air, so wine and the melancholy temperament are similar in nature. It is agreed that wine has its force from its froth, which wine stirs up; oil, however, although it is hot, does not foam; wine produces froth in large quantities and dark wine more than white because it contains more heat and substance. It is for this reason that wine excites sexual desire, and it is not unsuitable that Bacchus and Venus are joined.]
> (*Prob*. 85v; bk. XXX qu. 1)

In his treatise on coitus Maimonides echoes classical dietics. Advising the Sultan Al-Malik al Mustaffar ben Ajjub of Syria on methods of increasing his sexual abilities, Maimonides discusses foods which promote seed and facilitate erection. The *spiritus* necessary for successful coitus originates in the brain; after its complete concoction, the spinal column transmits it to the genitalia:

> And of greater benefit than any food or medicine for the aforementioned matter is wine. There is no substitute for it in this respect because the blood that is produced therefrom is warm and moist and rejoices the soul, and strongly incites to sexual intercourse because of its special characteristic which is linked to nature and fills the vessels with much good vapour. This is the movement of erection. (Cohab. 168-69)

That spiritus from wine travels to the brain where it augments the existing supply informs Vincent of Beauvais's chapter on moderation in partaking of wine. Referring to Haly Abbas's Regalis dispositionis, the Speculum attributes passionate behaviour to the wine's spiritus ascending to the brain: "Replentur enim ventriculi cerebri vaporibus veni" [For the ventricles of the brain are filled with the wine's vapours] (Spec. 1077; bk. XIV, ch. CXV). In too great a quantity, these vapours lead to headache and inebriation, but in moderate amounts they fortify the natural spiritus, kindling and aiding amorous activity.

Because of its warm and wind-producing properties, wine--especially the strong red variety--serves as an aphrodisiac without further augmentation. Constantinus advises those desiring sexual stimulation to partake of warm, moist foods which generate windiness, for the production of semen increases when reinforced by items similar in constitution. Spices which increase heat as well as foods rich in seminal matter increase in effectiveness if taken with wine (De coitu 62-63).[17] Although hot spiced wine may have been a traditional bed-time drink during the Middle Ages, January's intention has little to do with its soporific qualities. The Merchant specifically states that the old knight consumes these electuaries "t'encreessen his corage" (MerT 161; IV.1808), evidently not sufficiently "sharp and keene" (MerT 160; IV.1759) to withstand the rigours of his wedding night.

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[17] In "Constantinus Africanus and Chaucer's Merchant's Tale," Delany focuses on January's use of spiced wine as an aphrodisiac.

Although January prides himself on his youthful virility, his dependence on fortifying liquors hints that his prowess has suffered from the cooling and drying effects concurrent with both old age and excessive coitus. Significantly, the "sexual aids" sections of medieval medical treatises address themselves to the elderly or debiliated whose vigour has become impaired because of constitutional changes. Constantinus, for example, first cautions against frequent intercourse, then provides recipes for foods which generate semen and incite desire in the impotent or frigid:

> The ancients told which foods generate or dry up semen, which stimulate or repress desire, which produce or incite desire when it has been lacking, which repress or destroy any existing desire, which kindle lust for intercourse. (De coitu 62)

Maimonides writes for a Sultan emaciated and weakened by age yet desiring the "multitude of young maidens" available to him, even though he fears for his health in such lustful pursuits (Cohab. 162). January joins the ranks of the elderly men reluctant to give up amorous activities and eager to maintain as much as possible their bodily equilibrium of heat and moisture.

In both graphic descriptions of the old knight's love-making, Chaucer includes details about timing that relate to practices believed to minimize the harmful syphoning off of vital heat and moisture. After his nuptials, January intemperately labours till dawn (MerT 161; IV.1842), but he has been careful to enhance his constitution with aphrodisiacs. The second mention of his sexual pleasure reflects accepted medical advice regarding the opportune time for conjugal delights. Dispatching May to visit the ailing Damian, January sets out his agenda:

> Dooth hym disport--he is a gentil man;
> And telleth hym that I wol hym visite,
> Have I no thyng but rested me a lite;
> And spede yow faste, for I wol abyde
> Til that ye slepe faste by my syde.
> (MerT 162; IV.1924-28)

Even though his intention to enjoy his young wife's company in his bed forms the subtext of this speech, January does not importune May when she finally joins him: "He taketh hire, and kisseth hire ful ofte, / And leyde hym doun to slepe, and that anon" (MerT 142; IV.1948-49). Only after he has slept for a while does he complete what he has started.

Medieval guides which suggest ways of decreasing the harmful effects of coitus usually include a section on timing, dealing occasionally with fertility and the monthly cycle but more frequently with the question of the least damaging time of day to engage in sexual activity. For example, Constantinus instructs his readers that "there is, however, a proper hour for intercourse, when the body is in complete outward harmony i.e. neither replete nor fasting, neither cold nor hot, dry nor wet, but well tempered" (De coitu 59). He explains that before sleep is better than after because of the weakness which accompanies coitus, and that after meals is unwise because the food must be well digested in order to supply the blood and heat necessary for sperm production.

Aristotle similarly comments that the organs of nutrition work more efficiently during sleep:

> . . . opus suum facit nutritiua particula in dormiendo, magis quam in vigilando. nutriuntur autem & augentur tunc magis. . . .
> [. . . the nutrient part does its own work better when (the body) is asleep rather than awake; therefore nutrition and growth are greater. . . .]
> (De somno 24v; ch. I)

In fact, the digestive process itself induces sleep, for hot vapours from digesting food and wine ascend to the head after a meal. Reaching the brain, they can travel no further so they reverse direction to the body's lower extremities. The upper regions cool as the parts below the abdomen become warm, a process causing the eyelids to droop and drowsiness to set in. Aristotle summarizes:

> Et superiora quidem infrigidata, & exteriora: interiora vero, & inferiora calida, vt quae circa pedes, & quae intrinsecus.
> [And indeed when the upper and exterior parts are cooled, truly the lower and interior parts are warmed, that is the parts about the feet and the inner organs.] (De somno 26v; ch. IV)

The value of generally warming the viscera for facility of sperm production obviously reflects medieval theories which relate innate heat and moisture to sexual ability, but even the temperature of the feet figures in promoting successful coitus. In the Problems, Aristotle states:

> Semen à cibo proficisci necesse est: cibus autem omnis concoquitur, quo fatiati ad veneram planè incitamur.
> [Semen has to originate in food: because all food is concocted, those who are replete plainly are incited to intercourse.]
> (Prob. 12v-13r; bk. III, qu. 11)

In addition, he questions, "Cur nuditas pedum obsesse in re venerea potest?" [Why are bare feet an obstacle to having intercourse?] The answer explains how the lower extremities can impede the manufacture of sperm:

> An quoniam corpus, quod concuibiturum sit, calidum intus, atque humidum esse debet, quale per somnum potius esse, quam per vigiliam solet: ex quo etiam celeriter, ac sine corporis agitatione semen dormientibus profluit: vigilantibus vero non sine labore prodit. Simul autem sit, vt & reliquum corpus tale existat, & pedes humidiores sint, atque calidiores. Indicium, quam cum dormimus pedes obtepescere solent, vt qui vna cum internis partibus ita afficiantur. Ut nuditas pedum è contrario agit: siccat enim atque refrigerat, itaque siue impossibile, siue difficile sit, vt res agatur venerea, nisi pedibus calidis; eam tamen nuditiatem in vsu concumbendi incommodam esse necesse est.
> [Is it because the body when about to cohabit should be warm and moist internally, as is achieved during sleep rather than waking? Because of this, semen flows quickly in those who sleep without any movement of the body, while those who are awake cannot produce it without effort. But at the same time as the rest of the body remains the same, the feet are moister and warmer. This is indicated by the fact that in sleep the feet are usually warmer, similar to the internal parts of the body. But bareness of the feet causes the contrary, because they are dry and cool. Therefore it is impossible or at least difficult to have sexual intercourse unless the feet are warm. But it is inevitable that bareness of the feet prohibits intercourse.]
> (Prob. 16v; bk. IV, qu. 5)

Resting for a short time before engaging in sexual activity not only provides an opportunity for the digestion to concoct sufficient hot blood for ease of semen production, but it also guarantees that the feet will be warmed in sleep. The importance of this precaution should not be underestimated. Maimonides, for example, counsels those with problems in potency to pay particular attention to the feet:

> And one should massage one's feet every night before retiring until they redden, after having washed them in warm water. And one should do this in summer and winter, because whenever the feet become cold, erection subsides and diminishes. (Cohab. 180)

Similarly, in order to increase the strength and duration of the erection, Avicenna advises his patients to apply certain warming liniments to their feet after bathing them in warm water (Canon 281; bk. III, fen XX, tr. I ch. XVII).

While January readily resorts to fortifying wines in the expectation that such preventative measures will neutralize the deleterious effects of his intemperance, the Merchant does not report that he annoints his feet. He does sleep for awhile, however, before taking his pleasure with May, and according to medical authorities, this sleep warms and moistens both the body's interior and its extremities. Beneficial liquid produced by the condensation of the hot vapours replenishes the natural supply of moisture, so that sleep constitutes a warming and humidifying respite. When the food has been fully digested, the animal awakes:

> Expergiscuntur autem, cum concocta fuerit, & evicerit impulsa caliditas in angustum multa ab

> eo, quod circum stabat & discretus fuerit corpulentior sanguis, atque purior. [Therefore one awakes when concoction is complete and the heat which had been previously forced together in large quantity within a small compass (i.e., internalized) from the surrounding parts, has once more prevailed, and when a separation has been effected between the more corporeal and purer blood.] (De somno 27r; ch. VI)

Avicenna reiterates the Aristotelian position regarding the benefits of sleep:

> Sleep directs the innate heat inwards and strengthens the physical faculty. It weakens the nervous faculty by relaxing and moistening the passages. . . . Sleep takes up the digestion and maturation of food and converts it into blood. When the blood is distributed to the body, it generates primarily heat. (Gen. Prin. 180)

Necessary not only to the replenishing of heat, sleep and rest figure prominently in Avicenna's listing of the causes of moisture, whereas coitus heads the list of drying activities (Gen. Prin. 200). Following his mentor, he advises against cohabitation before a period of rest, in that the body must prepare reserves of heat and moisture to replace the depletion caused by intercourse. He suggests that sexual activity is best pursued at the beginning of the night, after a time of rest which allows digestion to manufacture copious semen. In addition, remaining in a supine position after intercourse enhances female fertility by assuring that the male seed does not flow out of the womb (Canon 280; bk. III, fen XX, tr. I, ch, XII).

Referring to this chapter of the Canon, Maimonides cautions that any "movement after partaking of food is very injurious, whether shaking, or sex or a bath, because they are very damaging." Complete digestion of nutrients must be effected before any strenuous activity, "and sleep will help with the concotion" (Preservation of Youth 26-27). Further echoing Avicenna's rule of temperance, Maimonides's aphorisms advise:

> During the time that one performs coitus, a person should not be filled with food, nor completely empty thereof, nor very cold nor very warm. The same applies to dryness and moisture.
> (Aphorisms 42: 2)

These ideal conditions can be realized after a period of rest.

In its explanation of nocturnal emissions, the Speculum naturale refers to Aristotle's observations that sleep facilitates semen production because it both warms and moistens the interior of the body:

> Cur enim calor recedit ab organis virtutem animalium intenditur interius in organis naturalium, propter hoc etiam accidit; quod homines libidine mouentur is somnis plusquam in vigilijs. Similite, etiam in somno digestio confortatur, & ex digestione semen quod est materia concupiscentiæ ministratur.
> [For when warmth recedes from the external organs it concentrates further inside in the internal organs, and because of this men are moved by lust more during sleep than waking. Similarly, while asleep the digestion is strengthened, and from the digestion semen which is the material of concupiscence is produced.]
> (Spec. 1842; bk. XXVI, ch. I)

Increased bodily heat and humidity lead to augmented sperm production, a process which although troublesome when uncontrolled ejaculation results can be useful in mitigating the harmful effects of conjugal relations. Quoting Aristotle, Vincent warns against excessive sexuality:

> Homo quidem & animalia viuentia cum homine coeunt omni tempore, sed quando fuerit homo multi coitus, debiletatur eius visus.
> [But man and all domestic animals have intercourse at all times, but when a man cohabits excessively, his vision is impaired.]
> (Spec. 2295; bk. XXXI, ch. VI)

To reduce the damaging effects of coitus, Vincent suggests the regimen proposed by his classical sources: "Post somnum vero peracta digestione ab illis quibus licet . . ." [But coitus is best performed after sleep when the digestion is complete . . .] (Spec. 2296; bk. XXXI, ch. VI). He then cites Avicenna's opinion that the beginning of the night provides the most convenient hour for intercourse.

The medical authorities agree in attributing restorative warming and moistening qualities to rest, qualities which aid the manufacture of semen. Yet too long a sleep becomes counter-productive to sexual activity, for the body uses the available nutrients, becoming ready for the morning meal. Ideally, coitus should take place some time after a meal, following a period of rest. Just as he carefully augments his vital heat and moisture through drinking spiced wine, January attempts to regulate his conjugal relations to the most auspicious times.

Neither of these strategems, however, suffices to forestall the depletion of bodily fluid leading to his blindness. The demands upon January's aging body, already fighting the cooling and drying attendant upon elde, overwhelm any attempt to replenish fading heat and moisture. Yet warmth and humidity constitute prerequisites not only for satisfactory love-making, but for fertility as well. Aristotle teaches that the elderly cannot produce fertile semen, even if they manage some form of emission. Arguing that seminal fluid does not originate as a waste product such as urine or extraneous phlegm, the Philosopher contends that it cannot be a useless excretion:

> . . . pessime enim dispositis propter etatem aut infirmitatem aut habitum plurimum inexistit tale, sperma autem minime: aut enim omnino non habent, aut non prolificum propter misceri inutilem superfluitatem et languorosam.
> [. . . because such is most abundant in persons of the worst condition through age or infirmity; semen on the contrary is abundant in them, for either they have none at all or it is not fertile, because a useless and feeble superfluity is mixed with it.] (De gen. an. 26; bk.1, ch. XVIII)

January's advanced years suggest questions regarding his potency, but Chaucer embellishes his description with details which leave little doubt as to his state of decrepitude. Even the slight reference to the cough which awakens him in time to importune his wife carries medical weight. By indicating a superfluity of extraneous phlegm, a condition caused by inadequate natural heat and vital moisture, January's nocturnal coughing demonstrates the lack of humoural balance common to the elderly. Replete with the noxious superfluities which Aristotle identifies as limiting the fertility of the aged, January's body betrays his pretense to virility. More importantly, January himself becomes aware of the effects of time. Prior to his marriage, he boasts of youthful prowess, denying the physiological dessication which confounds potency while heralding old age:

> Though I be hoor, I fare as dooth a tree
> That blosmeth er that fruyt ywoxen bee;
> And blosmy tree nys neither drye ne deed.
> (MerT 157; IV.1461-62)

Likening his white hairs, themselves the outward manifestation of interior putrescence, to the white blossoms which precede the production of fruit,[18] January alludes to his procreative ability.

His sudden blindness indicates that his attempts to conserve natural heat and moisture have demonstrably failed; he no longer exults in his undiminished virility but accepts his age:

> That, whan that I considere youre beautee
> And therwithal the unlikly elde of me,
> I may nat, certes, though I sholde dye,
> Forbere to been out of youre compaignye
> For verray love; this is withouten doute.
> (MerT 165; IV.2179-83)

January's claim that his limbs are green as the laurel (MerT 157; IV.1465-66) transforms itself into a confession of old age and a recognition that the "company" of his young wife, having already contributed to his blindness, could well lead to his death. Even in the face of medical evidence which denies his fertility, however, he continues to deceive himself into believing that May carries his child. Encountering few problems in convincing him that her "plit" requires a taste of the green pears, May confirms the narrator's cynical observation that "love is blynd alday, and may nat see" (MerT 158; IV.1598).

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[18] See my discussion of medical explanations for grey hair, Chapter 1.

3. Damian's Physiology

In comparison with the unfulfilled potential of January's "blosmy tree," the tree in which Damian awaits the consummation of his desperate love is charged with fruit (MerT 165; IV.2211). In spite of his cold, dry constitution, the aged knight deludes himself regarding his procreative capabilities, whereas by virtue of his youth alone the young squire abounds in the vital warmth and moisture necessary to fertile intercourse. Aristotle poses the question, "Cur omnium maxime animantium homo, postquam concubuit, dissoluitur, & languescit?" [Why does man, of all animals, become more languid after intercourse?] He responds:

> An quam semen proportione sui corporis plurimum emittit. Sed cur plurimum homo emittit? An quam minus cibum is conficit, & omnium maxime animantium humidus natura, & calidus est: quarum rerum altera seminis copiam reddit: altera naturæ vim efficit ad semen creandum.
> [Is it that he emits more semen in proportion to the size of his body? But why does man emit more? Is it because food is digested with less effort, and he is the most moist and warm of all animals? The first condition creates copious semen, the second provides the natural strength for the creation of semen.] (Prob. 16v; bk. IV, qu. 6)

Avicenna states that, in his prime, the young man demonstrates a warm, moderately dry constitution in comparison to women who are cold and moist and to the aged who become cold and dry. But this dryness measures relatively against the extreme moisture of children who use the excess for growth. The youth possesses sufficient moisture for sperm production, but not so much as to weaken the thickness and viscosity of the semen (Gen. Prin. 32-33). Bartholomaeus likewise writes: "in comparisoun to þe femel, þe male is hoot and drie, and þe femel aȝenward. . . . In males þe hertis beþ large and grete. Þerfore þey buth abil to fonge moche plente of spirit and of blood" (Trevisa 1: 306). The combination of plentiful spiritus with abundant blood allows for maximum sperm production when the man reaches adulthood. Medieval theorists agree with their classical instructors that the young male's heat allied with optimum moisture renders him most interested in sexual activity (Burrow 12-18). Being young, Damian enjoys an immediate procreative advantage over his elderly master. In fact, his youth combined with a warm constitution leads to his incapacitation due to lovesickness.

Constantinus identifies two cooperating causes for "amor qui est eros dicitur" [the love that is also called eros]:

> Aliquando huius amoris necessitas nimia est nature necessitas in multa humorum superfluitate expellenda. . . .
> Aliquando etiam eros causa pulchra est formositas considerata.
> [Sometimes the cause of this love is an intense natural need to expel a great excess of humours. . . .
> Sometimes the cause of eros is also the contemplation of beauty] (Wack 186; 188)[19]

In his Questions on the Viaticum Peter of Spain explains the two-fold nature of erotic love's origin:

> Circa secundum sic proceditur, scilicet causis huius passionis. Causa materialis huius passionis

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[19] I have used Mary Frances Wack's translation in all quotations from the Viaticum and its commentaries.

> est habundancia multi spermatis, sicut accidit in illis qui vivunt in occio et quiete et deleciis corporis. Sumuntur etiam cause huius a parte rerum desideratum et a parte desiderii et a parte frequencie cogitacionum que sunt in virtute estimativa et in memorativa.
> [Concerning the second point, namely the cause of this disease, we proceed thus: The material cause of this disease is an abundance of much seed, as occurs in those who live in leisure and quiet and bodily pleasures. Its causes are also taken from the desired objects, and from the desire itself, and from the frequency of thoughts that are all in the estimative faculty of the memory.]
> (Wack 232-33)

Although he eventually decides that lovesickness primarily affects the brain, Peter of Spain suggests that the cure for _amor ereos_ resides in alleviating the excess semen causing the morbid condition:

> . . . amor hereos maxime habet esse in illa complexione in qua magis reperitur stimulacio ad coitum, quia stimulacio ad coitum est maxime causa amoris hereos secundum Avicenna in tertio.
> [. . . lovesickness occurs most in that complexion in which is found more stimulation to intercourse, for stimulation to intercourse is the greatest cause of lovesickness according to Avicenna in the third (book of the _Canon_).] (Wack 220-21)

Constantinus's translation of the _Viaticum_ warns of dire consequences should the erotic obsession remain unalleviated:

> Unde si non eriosis succcurantur ut cogitatio eorum auferatur et anima leuigetur, in passionem melancolicam necesse est incidant. Et sicut ex nimio labore corporis in passionem laboriosam incident, itidem ex labore anime in melancoliam.
> [Thus if erotic lovers are not helped so that their thought is lifted and their spirit lightened, they inevitably fall into a melancholic disease. And just as they fall into a troublesome disease from excessive bodily labour, so also (they fall) into melancholy from labour of the soul.] (Wack 188-89)

Like Peter of Spain, the author of the Speculum naturale refers to Avicenna's third book throughout its discussion of human reproduction. Dealing with the causes of excess sperm, Vincent cites a lack of intercourse as the primary reason:

> Causa quidem quæ est in spermate . . . est eius multitudo propter paucitatem coitus, & multam aceptionen generantium sperma, propter quam indiget motu expellente. . . .
> [The reason is in the sperm production . . . lacking a method of expulsion, there is too much because of lack of coitus and too much semen being generated. . . .] (Spec. 2031; bk. XXXI, ch. XII)

Medieval commentators hasten to provide cures for lovesickness, the first and most obvious being union with the beloved. Failing that, sexual release with another beautiful woman also suffices to purge the accumulated seminal humours. Peter of Spain explains:

> Item morbi denominatur a sua materia ut patet in febribus sed materia amoris hereos vel coitus est sperma. Ergo amor hereos denominatur a spermate. Sed sperma est in testiculis. Ergo amor hereos est passio testiculorum.
> Item in cura cuiuslibet morbi in quo competunt emplastra membra *cicius ille morbus passio.* Sed in cura amoris hereos applicantur emplastra vel mulieres ad testiculos. Ergo amor hereos est passio testiculorum.
> [Also diseases are designated by their substances, as is appparent in fevers. But the substance of lovesickness or intercourse is seed. Therefore lovesickness is designated according to seed. But seed is in the testicles. Therefore lovesickness is a suffering of the testicles. Also in the cure of whatever disease in which plasters benefit a member *(manuscript corrupt) that disease quickly a suffering.* But in the cure of lovesickness, plasters or women are applied to the testicles. Therefore lovesickness is a suffering of the testicles.] (Wack 218-19)

Having argued from this position, Peter proceeds to state that although ejaculation may cure the symptoms of the disease, the morbid condition remains cerebral (Wack 237). Constantinus' translation of De coitu agrees that intercourse alleviates the symptoms of lovesickness, but it claims a cure as well: "It [intercourse] is good for melancholics, recalls madmen to their senses and frees lovers of their passion [provided they can lie with some other whom they desire]" (De coitu 60). In her analysis of lovesickness as a diagnosis, first for men and later for women, Mary Wack suggests that the importance of the cerebral element as a cause diminishes toward the end of the medieval period until finally the predominant explanation for amor eros is excess seed. Wack observes, "In the generation after Peter of Spain, Arnald of Villanova names a complexio venerea or humiditas titillans in organis generationis as an antecedent cause of amor hereos" (Wack 123).

Demonstrating the conventional symptoms of amor eros, the young Damian loves May at first sight:

> He was so ravysshed on his lady May
> That for the verray peyne he was ny wood.
> Almoost he swelte and swowned ther he stood,
> So soore hath Venus hurt hym with hire brond,
> As that she bar it daunsynge in hire hond;
> And to his bed he wente hym hastily.
> (MerT 160; IV.1774-79)

Languishing in desire, the lover miraculously recovers in anticipation of attaining his lady's "verray grace" (MerT 163; IV.1997),[20] only to plunge back into melancholy when January's blindness bars his access to May:

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[20] W. Ross suggests a frequent obscene pun on grace / grass / pubic hair (103).

> Upon that oother syde Damyan
> Bicomen is the sorwefulleste man
> That evere was, for neither nyght ne day
> Ne myghte he speke a word to fresshe May,
> As to his purpos. . . . (MerT 164; IV.2097-2101)

According to medical authorities, Damian's affliction may originate in the imaginative faculties of the brain, the image of the beloved having entered through his eyes (Wack 90), but brain, eyes and semen share a common constitution. An excess of unemitted sperm comprises the material cause of his illness, so that when the young squire ascends the tree "that charged was with fruyt" (MerT 165; IV.2211), his physical condition mirrors the fertility of his environment. The phallic symbolism of the pear merges with the image of the pear tree's bounty to provide a subtle indication of Damian's fertility. Where January compares himself to a "blosmy tree" (MerT 157; IV.1461), showing only the potential for creating fruit, Damian is identified with a tree already heavy laden. Interpreted in the light of medieval medical theories, January's age and blindness strongly suggest his procreative incapacity, whereas Damian's lovesickness combined with the symbolism of the fruitful pear tree underscores his virility.

The final tableau presented by "The Merchant's Tale" shows January, flattered by his impending fatherhood, lovingly caressing May's abdomen. Emphasized by the Merchant's unsavoury interest in his character's sexuality, the suggestion of May's pregnancy receives reinforcement from medical explanations of fertility and sterility. The question of fatherhood raised by January himself in his prenuptial musings as well as in his promises to May in the garden is similarly answered by these theories of physiology. The aged knight readily accepts his wife's protestations of innocence after the affair in the tree, as well as her claim that she is about to bear legitimate offspring. The tale's resolution suggests that May's relationship with Damian will continue to bear fruit in addition to hinting, more darkly, that January's already dangerous physical condition will worsen. If he persists in his lascivious ways--and the erotic undertones of the final picture leave little doubt that he intends no conversion--his already diminished supply of moisture and *spiritus* will not long sustain him. The ultimate irony of "The Merchant's Tale" may be that January's holdings will not only "fall into straunge hand," but also that the transfer will take place sooner rather than later.

CHAPTER 4

"AS GREET AS IT HAD BEEN A THONDER-DENT": THE END OF "THE MILLER'S TALE"

Hilarious in its coarseness, the intricate final scene of "The Miller's Tale" needs little explanation to reinforce its humour. However, an understanding of some relevant medical theories current in Chaucer's time intensifies the simple outrageousness of the joke. According to the learned doctors, sexual prowess is inextricably linked to the body's supply of _spiritus_ which in turn creates a condition of flatulence. Therefore Nicholas's prodigious thunder-clap provides physiological proof of his virility. On the other hand, Absolon's incompetence in matters of seduction is exacerbated by his effeminate constitution.

The Miller intends to "quite" the romantic love story told by the Knight with a tale of love on a much less refined level. Where the two knights vying for Emily's attention are virtually indistiguishable, the two clerks of "The Miller's Tale" share only their profession. Nicholas, more subtle and infinitely more knowlegeable about amorous intrigue than the fastidious Absolon, stands as a virile, active man, whereas Absolon's description and actions both demonstrate his passive effeminacy. The medical background of the tale intensifies this comparison by constantly invoking theories which focus on the sexual proficiency of the two rivals.

Absolon's revenge upon his more successful rival likewise draws upon medical teachings. When the horror of the misdirected kiss permanently cures Absolon of his love malady, he employs a form of cautery to inhibit Nicholas's further sexual activities by dispersing the very humours requisite for coitus. A knowledge of the medical background to the action thus suggests a new dimension to Absolon's retaliation.

1. Sex and Flatulence

According to most medieval writers who venture to provide explanations for sexual ability or the lack thereof, flatulence combined with sufficient seminal fluid and adequate natural heat comprise the three necessities for successful coitus. For example, Constantinus Africanus identifies three requisites to procreative ability, interpreting natural heat as desire which inflames man. In his introductory remarks he states that "three things are involved in intercourse: appetite (created by the fancy) spirit and humor. The appetite comes from the liver, the spirit from the heart and the humor from the brain" (*De coitu* 56). When he later provides recipes for aphrodisiacs, he prefaces his suggestions with a rationale for the effectiveness of certain substances:

> Foods only generate semen if they are very nourishing. We say also that semen consists of humor and spirit; it is made from the moisture of food, which must be one that generates semen, i.e. very nutritious and wind-producing, since these qualities harmonize with the essence of semen. But foods which do not have both these qualities will be helpful if they have just one; they may

> draw forth the semen (by their warmth) from hidden veins and carry it out, or they may be mixed with nutritious foods so that all these semen-producing qualities are derived from the mixture. So when we prepare food to stimulate desire, we make it from these three kinds. Each individual food may have one or two qualities; however, we may claim that chickpeas have all three. They are very nourishing, they generate windiness and they are warm and moist (only this combination of qualities produces semen). (*De coitu* 62)

Vincent of Beauvais cites the authority of Constantinus in his introduction to animal reproduction:

> Tria vero sunt in coitu, appetitus ex cogitatione phantastica ortus, & spiritus, & humour. Appetitus ab hepate, Spiritus a corde, Humour a cerebro. [Three things are necessary to coitus: the desire proceeding from fantasy, *spiritus* and humour. The desire comes from the liver, the *spiritus* from the heart and the humour from the brain.]
> (*Spec*. 1625; bk. XII, ch. XXVIII)

In their discusson of Albert the Great's approach to the problems of sexuality, Jacquart and Thomasset explain the connection between physiology and imagination as understood by the Universal Doctor. They refer to Avicenna in dealing with the three requisites for sexual energy:

> L'*appetitus ymaginativus* fait avec *spiritus* et *humour* partie des trois conditions nécessaires au coït, conditions auxquelles Avicenne ajoute la «ventosité». L'excitation érotique est provoquée par l'image de la femme aimée *pra oculis cordis posita*, alors que la représentation de l'homme convoité provoque le désir de la femme. Dans le plaisir, l'élément déterminant est non pas l'*exitus spermati*, mais bien plutôt le *spiritus*.
> ("Albert le Grand" 89) [1]

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[1] Thomas Cantimpratensis similarly refers to the need for spiritus in copulation:

> Virga est exitus superfluitatis humida et cursus spermatis, creatus ex cartilagine et carne. In libidine cartilago apparet, qua tunc tumescit commoto vitali spiritu ex concupiscentia mediis cogitationibus ex ymaginatione rerum delectantium. [The male member is the exit for superfluous moisture and the passage for sperm, created from

While they correctly identify the three bases of intercourse, they seem to misinterpret Avicenna's "ventosity" which does not comprise a separate category, but merely identifies the state of "windiness" achieved when sufficient spiritus exists. In the chapter of the Canon entitled "de causis erectionis," Avicenna quites clearly states that windiness must precede sexual congress:

> Erectio accidit quandoque propter tensionem carne concave et que sequuntur eam dilataem & prolongatem propter illud quidem effunditur ad ipsam de ventositate forti. . . .
> [Erection occurs because of the tensing of the hollows in the flesh which follows its dilating and elongating, because it becomes filled with a strong windiness]
> (Canon 279; bk. III, tr. 1, ch. 3)

Produced in the heart and the arterial system and reaching its fullest refinement in the ventricles of the brain, spiritus contributes to the fertility of sperm as well as to the male's ability to achieve erection and ejaculation. Aristotle establishes that tumescence depends upon air which fills the hollow cavities of the male member (De part. an. 191v; bk. IV, ch. 10), commenting in another work that pneumatic pressure expels the semen from its reservoir in the testicles:

> Cum semen genitale exit, spiritus antecedit & quidem ipso exitu constat agi cum spiritu: nihil enim procul sine violentia spirituali proiici potest.

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cartilage and flesh. In sexual excitement the cartilage becomes visible at the moment that it swells, when the vital spiritus is influenced by lust resulting from thought stimulated by the idea of pleasure.] (Liber 4-7; bk. I,ch. 61)

> [When genital semen is expelled, it is preceded by spiritus and furthermore, it is well known that it is spiritus that drives it out at the moment of exit: no ejaculation can take place without the impulse of spiritus.]
> (De hist. an. 76v; bk. II, ch. 7)

Logically building on the premise that flatulence encourages sexual performance, writers in the late Middle Ages unanimously agree that anti-aphrodisiacs must either cool the body's heat or decrease its "windiness." Lettuce, for example, counters lasciviousness because of its cooling properties, while the Chaste Tree or Agnus castus dispels desire by dispersing flatulence (Benedek 112-13). The Chaste Tree is commended by most physicians for its ability to decrease or obliterate sexual ability, meriting a full chapter in both the Speculum naturale and De proprietatibus rerum. Vincent explains that the plant derives its name from its properties, "quia libidinem reprimendo castum reddit hominem, sicut est agnus" [because it makes man chaste, just like a lamb, by repressing lust]. Elaborating on his theme, he recommends such cooling foods as lettuce, melons and cucumbers to extinguish the heat of lust, while herbs such as rue and Agnus castus disperse the spiritus:

> Alia vero inaniendo spiritus, & consumendo sperma. . . . Sunt enim calida & aperitiua, ventositatemque soluunt, & extenuant. [Other things certainly (decrease lust) by emptying the spiritus and destroying sperm. . . . For they are warm and cause (pores) to open, thereby releasing and reducing windiness.]
> (Spec. 908; bk. XX, ch. 47)

Less fulsome, Trevisa merely comments:

> Agnus castus is an herbe hoot and druye, and haþ vertu to kepe men and wommen chaste, as Plius

> seiþ. . . . And Dyas seiþ and Platearius also þat it makeþ chaste, openynge þe pores and drawynge out and wastynge þe humour and moysture semynal.
> (Trevisa 2. 915)[2]

Although Trevisa seems to differentiate between the seminal humour and seminal moisture, his English translation renders the action of *Agnus castus* somewhat ambiguous. No similar confusion appears in Bartholomaeus's Latin original which specifies clearly that the Chaste Tree possesses the virtue of dispersing *spiritus*:

> Hæc herba *secundum Diosc. & Platear* semper viret, & eius flos potissime agnus castus nuncupatur, quia odore & vsu reddit homines castos, sicut agnos *secundum Dioscor. & Platear*. Dicit aperiendo poros & spiritus euaporando, & humiditatem seminalem consumendo, inducere castitatem.
> [This plant, according to Dioscorides and Platearius is constantly in bloom, and its flower is chiefly called agnus castus because it makes men chaste, just like lambs, by its scent and application. It causes the pores to open and *spiritus* to evaporate and the seminal moisture to be consumed, and it results in chastity.]
> (Bartholomaeus 803; bk. 17, ch. 25)

If anti-aphrodisiacs operate by cooling the body or by reducing its flatulence, then aphrodisiacs must create the opposite effect. Basing his theories on the three necessities for successful coitus, Constantinus teaches that sexual dysfunction frequently originates in systemic disorders:

> When appetite arises in the liver (as we mentioned), the heart generates a spirit which descends through the arteries, fills the hollows of the penis (like a womb being filled) and makes it hard and stiff; nonetheless, some men cannot

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[2] "Dyas" refers to Dioscorides, "Plius" to Pliny the Elder and "Platearius" to Plinius.

> emit semen because a defect in the brain causes a lack of seminal humour. Conversely, if there is plenty of this liquid in the brain but weakness and lack of the windy spirit in the heart, semen is emitted, even involuntarily, without the penis being erect. If both liver and heart are defective, the man can neither have an erection nor emit semen. (De coitu 56)

That spiritus constitutes an essential aspect of sexuality seems well understood in late medieval medical thought. When Jacquart and Thomasset sum up the various medieval positions on sperm production, they conclude that "while all the theories applied to spermatogenesis are represented in the Middle Ages, the pneumatic component is, whatever the theory adopted, clearly in evidence" (Sexuality and Medicine 60).

The windiness of which medieval authors speak originates in the heart before a portion becomes further purified in the brain, but it is clear that they made little distinction between the rarified spiritus and the less noble intestinal gasses. Aristotle emphasizes the importance of spiritus in sexual activity in his discussion of the "windy" properties of wine which incite lust. Men disposed to flatulence, such as those of the melancholic temperament, similarly exhibit lascivious tendencies:

> Habitui igitur, naturæque atræbilius flatus ciere datum est. Quo circa vitia corporis, quæ flatum præ se serunt iliumque dolores atræbili Medici tribuunt: & vinum vere flatus mouere nimirum potest: quam ob rem similem ambo istæc sortiuntur naturam, atra bilis, & vinum. Constat vinum eam habere vim et spuma, quam excitat oleum, enim quamuis calidum, nihil spumat: vinum large, ampliusque nigrum, quam album, quia calidius, & corpulentius est. Vnde sit, vt cupiditatem Veneris accendere venum possit quare non inepte

> Venerem iunctam Baccho autumant. Et melancholici quoque magna ex parte libidine affluentius concitantur: concubitus enim flatus copia agitur. [To the more bilious temperament and condition it is given to speed up winds; wherefore Doctors say that flatulence and disorders of the stomach are due to black bile, and wine has the quality of containing air, so that wine and the atrabilious temperament are similar in nature. The froth which forms on wine shows that it contains air, for oil does not produce froth, although it is hot, but wine produces it in large quantities, and dark wine more than white because it contains more heat and substance. It is for this reason that wine excites sexual desire, and Bacchus and Venus are rightly coupled together. And atrabilious persons are generally considered lustful, for sexual desire is due to the presence of wind.]
> (Prob. 85v; bk. XXX, qu. 1)[3]

Although he does not explain the physiology behind his assessment of those prone to lovesickness, Constantinus Africanus alludes to Aristotelian teaching when he claims that intercourse benefits those whose humoral balance is dominated by black bile, that is, those of the melancholy temperament.[4] Because flatulence is necessary to coitus and because the symptoms of melancholy are due, in part, to superfluous windiness, even those of other temperaments fall prey to melancholy if denied an outlet for their sexual longings (Wack 188-89). Maimonides similarly links lustfulness with a condition of general windiness:

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[3] Cf. Prob. 19v; bk. IV, qu. 31:

> Cur libidinosi sunt, qui melancholici? An quod flatu redundant: semen autem decessio flatus est? [Why are those who are melancholy libidinous? Is it because they are full of breath, and semen is a discharge of breath?]

[4] ". . . such men desire intercourse all the time, because of the great windiness it generates. Because the windiness is pent up inside, they have internal rumblings and roarings, and a kind of buzzing noise can be heard from without" (De coitu 61-62).

> He who has an excess of black bile in his body is very fond of sexual intercourse because many strange flatulent gases accumulate in the body below the flanks. (Aphorisms 1. 29)

If the atrabilious naturally incline to lust because of their flatulent natures, and if foods which prevent lasciviousness operate by dispelling windiness, then logic dictates that aphrodisiac foods contribute significantly to the body's supply of spiritus. Because wine abounds in spiritus, old January consumes spiced wine on his wedding night in an attempt to warm his aged constitution and to augment his supply of vital wind.[5] Other foods useful to inciting intercourse show similar warming or wind-producing qualities. Constantinus recommends chickpeas and turnips as excellent semen-enhancers, closely followed by horsebeans which are "nourishing and generate wind, but are rather cold." He suggests that they be combined with long pepper, ginger or black pepper in an effective aphrodisiac casserole (De coitu 62).[6]

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[5] See my discussion of January's attempts to minimize the harmful effects of coitus, Chapter 3.

[6] Like Constantinus, Maimonides considers peas and beans effective in augmenting sexual potency because they contain "all that which warms and moistens the body, and . . . gas that dissolves in the third digestion" (Cohab. 166). Although she provides no rationale for the catalogue of foods increasing seed in both men and women, Trotula includes both substances whose effectiveness can be traced to sympathetic magic, such as the testicles of various animals, as well as the usual warming, moistening and wind-producing items:

> . . . suche metis ben yelkis of eyren and fressh flessh & nameliche of swyne, of cokkes, of sparewys, partryches, quayles and brayne od a bore & þe stones of bestes, as of bores, of boles, of wolues principalliche, and þe mary & the fatnesse and þe brayne of bestes; pyries, dates, almaundes, fygges, nuttes, pastinakes, rapys fryed with honye

Throughout late medieval medical writings, a clear connection exists between intestinal flatulence and sexual activity. Aphrodisiac foods induce bodily windiness, and persons of a windy disposition, such as the melancholic, exhibit increased libidinous desire as well as the "internal rumblings and roarings" (*De coitu* 62) indicative of a superfluity of gas. Coitus alleviates these discomforts by drawing on the body's supply of *spiritus* so that flatulence diminishes.

These theories joining flatulence to virility are humorously exploited in Nicholas's night of love with Alison followed by his vulgar "summons" to Absolon. In a scene not found in any of the sources or analogues of the tale,[7] Chaucer shows that even after amorous dalliance (doubtless placing considerable stress on his supply of *spiritus*) Nicholas retains enough flatulence to produce a fart of heroic proportions:

> This Nicholas anon leet fle a fart
> As greet as it had been a thonder-dent,
> That with the strook he was almoost yblent. . . .
> (MilT 76; I.3806-08)

Attesting to his stamina, the performance at Alison's window demonstrates that sexual athletics have not dangerously diminished his vital physiological components. Although he may be "lyk a mayden meke for to see" (MilT 68; I.3202), Nicholas is manifestly an extremely manly man.

& oyle of benen & pesyn & strong, swete wyne & saturnous. (Guide 94)

[7] Peter G. Beidler, "Art and Scatology in the *Miller's Tale*" 96.

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2. The Effeminate Man

In contrast, Nicholas's rival for the attentions of the winsome Alison presents a decidedly feminine appearance and demeanor. Absolon's effeminacy, having been established by his physical description and by his incompetent courtship, is reinforced by medical theories current in Chaucer's time. Described as "more ladylike than Alison" (Beichner 119), Absolon takes his place within the conventions of female beauty by means of his portrait which echoes traditional catalogues of womanly charms. Tracing the evolution of the medieval standard for female beauty, D. S. Brewer identifies golden hair, rosy complexion and grey eyes as necessary attributes of the lovely lady (Brewer 258-59). Formally established in the twelfth century by Matthew of Vendôme, the type of the beautiful woman continues until the sixteenth century. By Chaucer's time allusion to even one or two characteristics elicits an entire picture, as Brewer explains:

> The idealized beautiful girl corresponds to a basic element in man's experience. This element was so organized in medieval literature--the physical description is but a part of it--that a great poet needed only to touch on an essential detail or two to suggest the whole and, indeed, to bring it more powerfully alive than could be done by a full description. (267)

Chaucer uses the pattern in his portraits of the Lady White in The Book of the Duchess, Criseyde in Troilus and Alison in "The Miller's Tale," but, in startling fashion, he paints

Absolon in this mode also. Before proceeding to a detailed picture of the young clerk's stylish clothing, Chaucer devotes three lines to his magnificent golden hair (MilT 69-70; I.3314-16), followed by remarks on his red and white complexion as well as his "eyen greye as goos" (MilT 70; I.3317). Absolon's tight-fitting tunic, bright hose and fashionable shoes fulfill the convention in offering a head-to-toe survey entirely in keeping with established descriptions of feminine pulchritude.

Because of his name and his abundant hair, Chaucer's clerk inherits the reputation of his biblical predecessor who represents the "effeminacy of sin" (Kolve 164) in the exegetical tradition. As Paul Beichner points out, the detailed full-length portrait of Absolon by Peter Riga was known to Chaucer, likely influencing his portrayal of the parish clerk (120). Riga's _effictio_ presents Absolon as a model of feminine beauty, conforming to rhetorical models well established by the thirteenth century. Proof that his feminized picture of Absolon is no mistake, Riga later appropriates the description in its entirety to his later portrait of the Virgin Mary (121). Moreover, Beichner argues convincingly that, while Absolon's beauty may have originated as a masculine type, by Chaucer's time his name appears in lists of feminine pulchritude as well (132-33). Like his literary namesake, the scriptural Absolon possesses a beauty more feminine than masculine.

Feminine not only in physical appearance but also in personality, Chaucer's Absolon demonstrates a decorum more suited to a romance heroine than to her ardent lover. Careful of expression and uncomfortable with bodily functions, Absolon stands in marked contrast to his exuberantly amoral lady love.[8] Even his pallid and ineffectual courtship shows his lack of masculinity. Whereas the goal-oriented and ultimately successful Nicholas pursues a direct course in his wooing, the fastidious Absolon lingers in a fantasy of genteel posing. Nicholas wastes little energy in lovesick posturing, making his move at the first possible opportunity:

> And prively he caughte hire by the queynte,
> And seyde, "Ywis, but if ich have my wille,
> For deerne love of thee, lemman, I spille."
> And heeld hire harde by the haunchebones,
> And seyde, "Lemman, love me al atones,
> Or I wol dyen, also God me save!"
> (MilT 69: I.3276-81)

Full of sexual innuendo, this speech reaches its climax when Nicholas kisses Alison then retreats to his music:

> Whan Nicholas had doon thus everideel
> And thakked hire aboute the lendes weel,
> And kiste hire sweete and taketh his sautrie,
> And pleyeth fast, and maketh melodie.
> (MilT 69; I.3303-06)

Because of the intimate connection between music-making and lovemaking in this tale,[9] the exact nature of the instrument which Nicholas so enthusiastically plays after his erotic encounter remains in some doubt, especially as he employs diction carrying very specific double meanings. Where "spille" ostensibly means "perish," its obscene denotation refers to ejaculation, as does the verb "to die," used two lines later. In this context, the contrast between Nicholas's psaltery and Absolon's "small rubible" (MilT 70; I.3331; emphasis mine) assumes bawdy connotations.

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[8] Beichner 124. See also Beidler "Art and Scatology" 93. Beidler points out that Alison serves as a foil not only for the dandified Absolon, but for the refined and distant Emily of "The Knight's Tale."

[9] See Jesse M. Gellrich, "The Parody of Medieval Music in the Miller's Tale" 177: "From the outset when Nicholas plays his 'sautrie' in expectation of amorous encounters with Alisoun to the eager love songs of Absolon to the scene when the lovers make a revelrous melody in bed, music is the metaphor of love." More specifically, music is the metaphor of sex.

In opposition to Nicholas's aggressive pleading, the delicate Absolon chooses to inform his intended of his devotion by gently singing at the window of her conjugal bedroom:

> He syngeth in his voys gentil and smal,
> "Now, deere lady, if thy will be,
> I praye yow that ye wole rewe on me. . . ."
> (MilT 70; I.3360-62)

Framed in direct, forceful language, Nicholas's declaration accompanies unambiguous action; Absolon, on the other hand, quietly requests Alison's mercy. No man of action, a kiss from his beloved is all that he expects, even when he believes her old husband to be absent:

> To Alison now wol I tellen al
> My love-longynge, for yet I shal nat mysse
> That at the leeste way I shal hire kisse.
> (MilT 74; I.3678-80)

Wondering at the ineptitude of Absolon's courtship, Kolve remarks, "whatever he may be up to, sexual desire seems at most tangential to it" (197). Absolon certainly appears interested in the opposite sex, however; he pursues the tavern barmaids equally with the devout wives of his parish:

> There any gaylard tappestere was.
> But sooth to seyn, he was somdeel squaymous
> Of fartyng, and of speche daungerous.
> This Absolon, that jolif was and gay,
> Gooth with a sencer on the haliday,
> Sensynge the wyves of the parisshe faste;
> And many a lovely look on hem he caste,
> And namely on this carpenteris wyf.
> (MilT 70; I.3334-43)

The parenthetical reference to Absolon's squeamish nature is not at all out of place in this passage. Although he poses as an ardent lover, his refinement is such that he is repelled by the bodily realities of life. These realities include, presumably, the physical consummation of his love-longing, dependent as it is on flatulence. Situated in the middle of a passage which comments on Absolon's romantic interests, these lines suggest a lack of enthusiasm for any concrete expression of his passion, even though he delights in the less intimate rituals of courtship. Medical authorities teach that the effeminate man suffers from physical deficiencies which explain both his indifference to sexual congess and his womanly nature. An investigation of these theories illuminates Absolon's actions in "The Miller's Tale."

The effeminate man owes his lack of masculinity to his prenatal history. Optimum uterine conditions, including vigorous semen from the right testicle of the father, weaker semen from the mother and a warm location on the right side of the bicornate womb conspire to produce a male child. Female children result from variations of these conditions: paternal semen weak enough to be overpowered by the female sperm or placement in the cooler left side of the uterus. Because the theory deals with three variables, permutations occur which explain effeminate boys or masculine girls. Aristotle dismisses the primacy of uterine heat in forming a male or a female animal, emphasizing instead the crucial role of the semen. Having stated that the father contributes the principle of procreation, the mother the material, he contends that the origin of the sexes lies in the relative strengths of the two sperms:

> Differt autem masculi sperma, quia habet principium in se ipso tale quale movere in animali et digerere ultimum alimentum, quod autem femelle materium solum. Dominans quidem igitur ad ipsum ducit, victum autem ad contrarium permutat in corruptionem.
> [But the sperm of the male differs (from that of the female) because it contains in itself a principle such that it causes movement in the animal and digests fully the ultimate nutrient (i.e., becomes male) but that of the female contains only material. Therefore if this male element dominates, it draws the female (matter) to itself, but if it is vanquished, it transforms into the opposite (i.e., female) and (the male element) is destroyed.]
> (De gen. an. 125; bk.IV, ch. 1)

If the male semen prevails, an embryo results which differentiates into maleness by virtue of its male ability to concoct plentiful, hot blood, the heart being the first organ created. Caused by the predominance of cooler, weaker female semen which for some reason "vanquishes" the male sperm, the female fetus does not develop the ability to produce sufficient blood of the necessary temperature. Its sexual characteristics therefore become feminine, for the embryo lacks the necessary heat to produce a more perfect male individual. A woman, in Aristotelian thought, comprises a slightly "undercooked" and thereby imperfect man.[10]

Placement in the womb accounts for some fetal development, however, even though Aristotle denies a causal relationship between uterine environment and gender. He observes:

> Mares foetus magna ex parte circa quadragesimum diem, dextro potius latere mouentur: foeminæ sinistro, circiter nonagesimum. Nihil tamen certi in his affirmari licet, multis enim ferentibus foeminam, motus agitur in dextro & contra in sinistro, generibus marem. Sed enim hæc & reliqua huiuscemodi, vt differunt, eo quo magna ex parte, & magis minusve accidit, sic accipimus.
> [In the case of male children, the first movement usually occurs on the right-hand side of the womb, about the fortieth day, but if the child be female, then on the left-hand side and about the ninetieth day. However, we must by no means assume this to be an accurate statement of fact, for there are many exceptions in which the movement is manifested on the right-hand side though a female child is coming, and on the left-hand side though the infant be a male. And in short, these and all suchlike phenomena are usually subject to differences that may be summed up as differences of degree.]
> (De hist. an. 74v; bk. 7, ch.3)

Likening procreation to the work of artisans, Aristotle explains by analogy the influences of semen and uterine environment:

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[10] De gen. an. 55; bk. II, ch. 3:
Femella enim est quemadmodum orbatus masculus, et menstrua sperma, non purum autem. Unum enim non habet solum, anime principium.
[The female is like a deprived male, and the menstrua are sperm, but not pure. They do not have only one thing: the principle of soul.]
See my discussion of male and female generative organs, Chap. 1.

> Dura quidem igitur et mollia et viscosa et fragilia, et quecumque alie tales passiones existunt animatis particulis, caliditas et frigiditas facient utique, rationem autem qua iam hoc quidem caro, hoc autem os, non adhuc, sed motus qui a generante eo qui actu existit, quod est potentia ut ex quo fit, quemadmodum et in hiis que fiunt secundum artem: durum quidem enim et molle ferrum facit calidum et frigidum, sed gladium motus organorum habens rationem artis. [While then we may allow that hardness and softness, stickiness and brittleness and whatever other qualities are found in the parts that have life and soul, may be caused by mere heat and cold, yet when we come to the principle by virtue of which flesh is flesh and bone is bone, that is no longer so; what makes them is the movement set up by the male parent, who is in actuality what that out of which the offspring is made is in potentiality. This is what we find in the products of art; heat and cold make the iron soft and hard, but what makes the sword is the movement of the tools employed, this movement containing the principle of the art.]
>
> (De gen. an. 49-50; bk. II, ch.1)

The male sperm acts as the first principle in engendering a child, but the female provides the substance of its being and the climate wherein it is nurtured. Changes in any of these factors cause differences of gender or of sexual identity.

Speaking of impotency and infertility, the Philosopher teaches that both men and women are sterile from birth when the members of generation develop imperfectly. Men so afflicted demonstrate womanly attributes such as soft, hairless skin; high, gentle voices and a delicate, feminine disposition, whereas females suffering from too much warmth in the womb never develop the usual secondary sex characteristics, becoming hard-bodied, aggressive and masculine. He comments:

> Fiunt autem hec quidem sanabilia, hec autem insanabilia talium, maxime autem perseverant sterilia secundum primam constitutionem talia facta: fiunt enim mulieres masculine et viri feminini, et hiis quidem non fiunt menstrua, hiis autem sperma subtile et frigidum.
> [Some of these are curable, others incurable, but they remain sterile especially if anything of the sort (i.e., an injury to the members of generation) has happened in the first formation of the parts (i.e., in the womb); this causes masculine women and feminine men, and the former do not menstruate and the latter produce thin, cold sperm.] (*De gen. an*. 78; bk. II, ch. 7)

Because the inferior semen of such men lacks the warmth and viscosity supplied by an abundance of *spiritus*, they perform very poorly in coitus, even though they may experience sexual desire because their moist feminine constitutions manufacture a superfluity of seminal matter.

Claiming that he merely clarifies work previously accomplished by his great masters, Hippocrates and Aristotle, Galen seems to ignore the Philosopher's reservations about placement in the womb. He teaches that male embryos, having been initiated by the life-giving principle in semen from both parents, occupy the right horn of the uterus, females the left:

> Unde Hippocrates ait: *Mulieri utero gerenti si mammarum altera gracilis evadat gemellos ferenti, ipsa alterum abortu edit; et si dextra quidem gracilescat, masculum, sin vero sinistra, foeminam*. Quod Hippocrates dictum illi est consonum: *Foetus mares quidem in dextris, foeminae autem in sinistris sunt magis*.
> [Thus Hippocrates has said, "If a pregnant woman is carrying twins and one breast withers, she loses one child by miscarriage, a male if it is the right breast that withers, a female if it is the left." The following statement is in agreement with Hippocrates's saying: "Male fetuses are mostly on the right side, females on the left."] (*De Usu* 153; bk. XIV, ch. IV)

Any divergence from this standard can lead to sexual ambiguity:

> Ut igitur generatim dicam, quaelibet in animali pars morbida magis atque imbecillior in omnem vitam redditur, si quod vitium vel exiguum in prima conformatione ei obtigerit. . . . Siquidem fieri aliquando potest, ut, etiamsi initium a foemina fit profectum, semen, quod alioqui foeminam erat generaturum, a dextra matrice calfactum foetum efficiat masculum; contra, quod masculum erat geniturum, a sinistra refrigeratum in contrarium transmutetur. Quandoquidem, si semen sit paulo frigidius, matrix vero plurimum sit calida, nil miri est ab ea, quod spermati deest, adjici; sin vero plurimum sit refrigeratum, deinde in ateate declinantis animalis in dextram matricem inciderit, haudquaquam ab ipsa juvabitur. Quum igitur duplex sit masculorum generationis principium, in foeminis quidem dextra matrix, in masculis vero dexter testiculus; matrix autem ut plurimum valentior sit ad foetum sibi assimilandum, ut quae diutius cum eo versatur: consentaneum est foetum masculum in dextra, foemininum vero in sinistra bonam partem inveniri; siquidem ut plurimum ipsa sibi ipsi semen assimilat. Potest tamen accidere, ut interdum a caloris, qui semini inest, vi subacta masculum pro foemina foetum fieri permittat.
> [To speak generally, then, whenever some little thing goes wrong with any part of an animal while it is first being formed, that part is weaker and more sickly throughout life. . . . For since a principle (of generation) springs from the female, it sometimes happens that the female-producing semen, warmed by the right uterus, is made into a male fetus, or that the male-producing semen, chilled by the left uterus, changes into the opposite (sex). In fact, it is not at all surprising that when the semen is (only) a little colder and the uterus is much warmer, it adds to the semen what is lacking (to make the fetus male); but if the semen should be very much chilled and then fall into the right side of an aging animal, it would get no help at all from the uterus. Hence since there are two principles for the generation of males, the right uterus in the female and the right testicle in the male, and since generally the uterus is the better able of the two to make the fetus like itself because it is associated with it for a longer time, there is good reason for the fact that for the most part male embryos are found there and females in the

> left uterus; for in most cases this (left uterus) makes the semen resemble itself. But sometimes, if it is overcome by the power of the heat in the semen, it could allow the fetus to become a male rather than a female.]
> (De Usu 173-75; bk. IV, ch. VII)

Somatic changes effected in the womb do not always result in a totally transformed embryo. A male fetus, receiving too little warmth for full perfection, might not actually become a female, but could assume feminine characteristics. Especially liable to damage from lack of heat, the genitalia could develop improperly, thereby confusing the gender of the individual.[11] Discussing sexual differentiation, Aristotle observes that secondary sex characteristics depend upon the primary, varying in response to any injury or imperfection of the genitalia:

> Oportet autem intelligere quia modico principio permutato multa simul permutari consueverunt eorum que circa principium. Palam autem hoc in excisis: genitali enim particula corrupta solum tota fere forma simul permutatur, in tantum ut aut femella videatur esse aut parum deficere. . . .
> [We must observe that a small change in the first principle is often accompanied by changes in those things which depend upon it. This is plain in the case of castrated animals: though only the genitals are destroyed, virtually the whole form of the animal changes likewise so much that it is seen to be female or close to it. . . .]
> (De gen. an. 6; bk. I, ch. 2)

Primary sexual characteristics develop in the womb where too hot or too cold an atmosphere can lead to distortions of the standard configuration. Galen agrees with Aristotle that the woman is in fact a defective man, this deficiency precipitated by insufficient uterine heat. The generative organs therefore remain internalized rather than reaching their full potential of externalized maleness (De usu 158v-59r; bk. IV, ch. VI).

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[11] For an explanation of the necessity of sufficient warmth to the proper emergence of male genitalia, see my discussion, Chapter 1.

Effeminacy in men can be traced to a fault in fetal development which somehow tampers with the generative organ, a defect manifested in dubious sexual ability. Although predisposed to bi-sexual behaviour, they by no means turn entirely to homosexuality. Indeed, in one of the few medical references to homosexual inclinations, Isidore implies that males naturally drawn to females resort to their own sex because of rejection, not because of any intrinsic attraction:

> Both (sexes) differ in bodily strength and weakness, the man's strength being greater, the woman's less, so that she may be subject to man, lest, women having repelled a man, lust may not drive him to strive after another woman, or to fall upon his own sex. (50)[12]

As do his classical sources, Vincent of Beauvais identifies effeminate men as those somehow damaged in the womb so that their male potential remains unrealized.

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[12] The Speculum naturale repeats Isidore's opinions without identifying the author:

> Sed ideo virtus maxima viri est, mulieris minor, vt patiens virum esset, scilicet ne fœminis repugnantibus libido cogeret viros aliud appetere, aut in alium sexum proruere.
> [But this strength is greatest in men, less in women, so that they may be subject to men, and of course so that the man is not repulsed in his sexual desires causing him to turn to something else, or to seek another sex.]
> (Spec. 2384; bk. XXXI, ch. CXIIII)

Proper functioning of the male generative organs determines masculinity, as demonstrated by the female attributes developed by castrated males. Referring to Aristotle, the Speculum repeats the verdict on those males deprived of sex organs:

> Animalia omnia castrata mutantur in naturam fœminarum. Nec solum corpus, sed & animus eorum effæminatur, vt parum distent à fœminis.
> [All castrated males are changed into the nature of females. Not only their body, but also their soul is feminized so that they are little different from females.]
> (Spec. 1623; bk. XXII, ch. 25)

Vincent opens his investigation of the role of heat in gender determination with a question:

> Et quoniam embryo priusquam in matrice compleatur eius creatio, distinguitur mas & fœmina. Dubium est vtrum illa differentia fit ex mare aut ex foemina, an ex locis matricis? quia mas erit in parte dextra, fœmina vero in sinistra?
> [And how primarily is the creation of the embryo completed in the womb, so that it is distinguished as male or female? It is disputed whether this differentiation comes from the male or the female (parent), or from the location in the womb whereby the male is in the right part, the female in the left.] (Spec. 1630; bk. XXII, ch. XXXVII)

He then provides Aristotle's analysis of the various hypotheses of sex determination, finally agreeing that while the gender of the fetus is determined ultimately by its ability to manufacture hot blood, its position in the womb influences the development of the heart which in turn produces the blood. Females therefore generally occupy the cooler left side, males the warmer right. Testifying to the importance of this concept, he quotes seven authorities who allocate female embryos to the left, males to the preferred right side of the womb. If a fetus destined to become female because of weakness in the male semen from which it originates falls into the right pocket, the child will emerge a masculinized female. A male fetus migrating to the left chamber will become effeminate.

Without entering into the debate over the structure of the uterus,[13] he begins his discussion with a quotation from Nicholas's Anatomy, contending that the womb comprises seven sinuses:

> In matrice quidem septem fossae sunt: Tres à dextris, & tres à sinistris, & vna in medio: Vnde dicunt quidam, quod à dextris tantum mares, & à sinistris tantum fœminæ concipiuntur in medio vero hermaphroditi, scilicet, qui habent vtrumque sexum: Alii referunt hoc ad facultatem naturæ dicentes quod quilibet sexus potest in qualibet fossula concipi. Sed si fœmina concipiatur in dextra, virilis erit. Si vero mas in sinistra, similiter effœminatus erit.
> [There are seven cavities in the womb, three on the right, three on the left and one in the middle. And they say that when (the fetus) is on the right, therefore a boy is conceived, and on the left a girl and in the middle an hermaphrodite which is seen to have both sexes. Others refer to this as a natural happening, saying that the sex is determined by whichever chamber in which the fetus is conceived. But if a female is conceived in the right, she will be manly. If a boy in the left, similarly he will be feminine.]
> (Spec. 2319; bk. XXXI, ch. XXXVI)

The remainder of his examples reflect the usual opinion that the womb has two pouches. Citing the authoritative Avicenna, for instance, he explains:

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[13] Although the majority of medical writers follow Aristotle in assigning a bicornate form to the womb, the Anatomia Magistri Nicolai Physici divides the uterus into seven cells. Dependent upon the pseudo-Galenic treatise, De Spermate, this work opposes the authentic Galenic description of two cavities as found in the De Usu. See Sexuality and Medicine 34-35.

> Et dicunt quidam quia si currit ex dextro viri ad dextrum eius masculinat: Sin autem ex duobus sinistris fœmininat: Si vero currit ex sinistro eius ad dexteram ipsius erit fœmina masculina, & si econtrario masculus fœmineus.
> [And so we say that if the semen comes from the right testicle to the right side of the womb, it becomes a male; if it comes from the two left sides, it becomes a female. If it comes from the left testicle to the right side of the womb it will be a masculinized female, and the contrary (right testicle, left womb) produces an effeminate male.] (Spec. 2320; bk. XXXI, ch. XXXVII)

Constantinus Africanus likewise explains the creation of the sexes as a process involving both parents:

> However, there are two determining causes in conception, one from the woman and one from the man. If the warm semen falls in the cervix and reaches the left side, it will engender a girl, if it reaches the right side, a boy; though it happens sometimes that the virtue of warmth is defeated. Some doctors say that if the semen which comes from the right side of the man falls in the left side of the womb it produces a boy, but an effeminate one; whereas if the semen from the left side falls on the right, it makes a masculine girl. (De coitu 58-59)

While Trevisa's translation of Bartholomaeus never addresses the question of sexual aberrations, he adheres to the standard teaching on the bicornate womb and the role of heat in determining gender. His chapter on the creation of infants explicitly states:

> This mater (i.e., semen) igedred in þe celle of þe riȝt side of þe modir falleþ to a males kynde, and in þe lift side to þe kynde of a womman female. And þis diuersite falliþ for maistrie of hete in þe riȝt side more þanne in þe lift side. So seiþ Galien, Constantyn and Aristotle libro 15^{o}.
> (Trevisa 1. 294-95)

Damage to the members of generation effects a change to the entire body, as the chapter dealing with the genitals explains:

> And þese stones (testicles) ben iclepid principal membres, for þey bene þe propre instrumentis of principalle worchinge of þe kynde vertue of gendringe. And ȝif þey bene ikutte of, mannes strengþe passiþ and manly complexioun chongiþ into femel complexioun. (Trevisa 1. 261)

The impairment of the generative members caused by castration represents only the most extreme harm possible to the male animal. Galen's statement that any change in a principal member causes a mutation of the entire animal suggests a continuum whereby small injuries caused by lack of sufficient uterine heat manifest themselves in the adult individual's sexual configuration. Effeminate men, therefore, result from a deprived fetus which has not enjoyed the warmth necessary to produce full masculinity. Because the members of generation determine the sexual characteristics of the individual, and because these organs require intense heat to become externalized, the effeminate man is considered to be somehow sexually deficient. In her analysis of sex-related character types, Hildegard of Bingen identifies the effeminate man as weak in all respects, including fertility:

> Der Wind, der in ihren Geschlechtorganen wohnt, hat wenig feurige Kraft, weil er lauwarm wie Wasser ist, das kaum erwärmt wurde. Seine beiden Gebilde, die ihm wie zwei Blasebälge zum Schüren des Feuers dienen sollten, sind verkümmert, unterentwickelt und zu kraftlos, den Stamm aufzurichten weil sie die Fülle der Feuerskraft nicht in sich halten. Solche Männer können bei der geschlechtlichen Umarmung geliebt werden, wobei sie sowohl Männern wie Frauen beizuwohnen begehren. . . .
> [The wind in their genitals has little fiery force, for it is lukewarm like water that has hardly been heated. His two spheres, meant to

> serve him like bellows to tend the fire, are stunted, underdeveloped and too feeble to erect the trunk, for they do not hold within them the riches of the fiery power. However, such men can be loved in sexual embrace, whereby they desire to cohabit with women as well as men. . . .]
> (Heilkunde 142)[14]

This sexual ambiguity can be traced to a defect in the male organs of effeminate men. Prior to ejaculation, semen follows a route from the testicles through the buttocks, eventually reaching the penis. Galen explains:

> De magnitudine autem vasorum spermaticorum (hinc enim sermo noster est digressus) miriari oportet naturam, quo pacto prius ipsa a testibus deducens ad ilia, eadem rursum ad maris pudendum reduxit; quo loco postea ad meatum, qui a vesica proficiscitur, orificia aperuit, per quem etian urina excernitur.
> [About the length of the spermatic vessels (for that is the subject from which my discourse has been digressing) one must admire Nature for the way in which she brings them first up from the testes toward the flanks (buttocks) and then down again to the male pudendum where she presently opens them into the channel which leads from the bladder and through which urine also escapes.]
> (De Usu 197-98; bk. XIV, ch. 13)

Constantinus likewise identifies the male posterior as a reservoir of semen, although he disagrees with Galen as to the passage through the penis:

> But those who are sound in both (spiritus and seminal matter) can have fertile intercourse; in them the semen is drawn from the brain into the veins which descend behind the ears, then into the spinal cord, then to the kidneys, then to the buttocks from which it is ejaculated through the penis--though not through the urinary duct but through another especially for semen.
> (De coitu 56)

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[14] For a discussion of Hildegard's categories for the sexes, see Prudence Allen, R.S.M., "Hildegard of Bingen's Philosophy of Sex Identity" 231-41.

Effeminate men, however, suffer some disruption in this normal route, as Aristotle suggests. Having explained that the body provides places for its natural secretions to gather before expulsion, he shows how sexual defects cause semen especially to collect in the buttocks in the case of feminized men:

> . . . his autem proxime genituram quoque in testes, & penem deferri constitutum est. Quibus itaque meatus habitu suo naturali priuantur, vel quia obcæcati sunt, qui ad penem tendant (quod spadonibus hisque similibus euenit,) vel etiam aliis de causis, his talis humour in sedem confluit, quippe qui hac transmeare soleat: quod eius loci contractio in coeundo, & partium sedi appositarum consumpio indicant. . . . Quorum vero natura mollis & fœminea est, ita ii constant, vt genitura vel nulla, vel minima conueniat, quo illorum secernitur, qui predicti natura integra sunt, sed se in partem sedis diuertat: quod propterea euenit, quia preter naturæ norman constiterunt.
> [Similarly the semen collects in the testicles and penis. In those whose passages leading to the penis are naturally deprived or which are obstructed (such as in eunuchs or those similar to them) or for other causes, all this humour collects in the buttocks, for it passes out of the body by this way: as is indicated by the contraction of this place in sexual intercourse and the wasting away of the parts around the buttocks. . . . Those who are naturally weak and effeminate are so constituted that little or no semen is secreted where it is secreted by those who are in a natural state, but it collects in the buttocks because they are unnaturally constituted.] (Prob. 18v-19r; bk. IV, qu. 27)

Both the description of Absolon which establishes him as beautiful in a feminine way and the mention of his maidenly squeamishness serve to establish the young clerk as an object of mockery. Drawing on the medical understanding of effeminacy, they also succeed in casting doubt on his sexual adequacy. His encounter with the naked posterior, therefore, fills him with horror, for he lacks the physical components which create normal desires for genital sex. Confronted with the bare truth about the act of love, Absolon repudiates all further romantic involvement.

3. The Misdirected Kiss

Explanations of sexual performance also inform the final scene of "The Miller's Tale" in which, after the degradation of the hairy kiss, the frustrated and humilitated Absolon brands his successful rival. As Beidler points out in his article on the scatological content of the tale, Chaucer changes the recipient of this kiss:

> In the Flemish analogue--as well as in all of the other European analogues--it is the male lover who presents his buttocks out the window for the kiss, while the woman stays in the shadows. Chaucer is unique among early tellers of the story in having the woman execute the trick. (92)

Having allowed Alison the first joke, Chaucer reverts to the male lover for the fart and the branding. If, as Kolve contends (191), Absolon's hot coulter is intended for Alison,[15] the humour at the end of this tale becomes very black indeed. But, although in actuality he has kissed Alison, Absolon believes that it was Nicholas's posterior which was thrust out of the window for the kiss. The night is dark. Absolon concludes that something is amiss only by the feel of hair on the object that he kisses. Only then does he hear Alison's laughter joined by Nicholas's comments:

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[15] See also Peter Goodall's article on Absolon in "The Miller's Tale." Identifying Absolon's desire for revenge as "a streak of real malevolent 'bitchery'" in keeping with his effeminate nature, Goodall states that "the terrible branding with the red-hot iron must be intended for Alisoun. Nicholas is burned purely by accident" (35).

> "A berd! A berd!" quod hende Nicholas,
> "By Goddes corpus, this goth faire and weel."
> This seely Absolon herde every deel,
> And on his lippe he gan for anger byte,
> And to himself he seyde, "I shal thee quyte."
> (MilT 75; I.3742-46)

The hairiness of the kiss plus Nicholas's obvious enjoyment of the joke convince Absolon that he has encountered the posterior of his male rival. For this reason he sees his soul condemned to hell:

> "My soule bitake I unto Sathanas,
> But me were levere than al this toun," quod he,
> "Of this despit awoken for to be."
> (MilT 75; I.3750-52)

In addition to Satanic ritual, and indeed as adjunct to Satanic practice, the osculum in tergo suggests homosexual activity. Prone to accusations of unnatural sexual interests, the effeminate man seeks the company of women, but it was commonly understood that his incompetence leads him to male lovers as well. In a sequence of events which fits the pattern suggested by medical writers, Absolon is cruelly rejected by his female love interest and duped into (as he believes) sexual contact with a male. Disgusted by the idea of bodily contact and sensitive about his sexual orientation, the enraged clerk vows revenge on his male tormenter, not on the less culpable Alison.

Chaucer prepares for Absolon's revenge earlier in the tale. Lovesick for Alison, Absolon languishes in an eroticized but unsatisfied state while Nicholas enjoys a night of lovemaking. Medical writers agree that erotic desire or lovesickness afflicts the brain but originates partly in the production of excess sperm. This unhealthy superfluity must be evacuated or it will occasion serious, even fatal, humoral imbalance.[16] But explanations of effeminacy indicate that Absolon's generative apparatus suffers impairment, his seminal surfeit collecting in the buttocks. Aware only of his own physical condition, his plot to gain revenge for the misdirected kiss expertly connects with the medical understanding of the buttocks's essential role in coitus. Ironically, the branding of Nicholas purges superfluous humours which incite the desire for intercourse. Having been cured himself by the shock of the posterior kiss, Absolon applies to his rival another kind of remedy for sexual desire.

While serious medical writers agree that union with the beloved presents the most effective cure for the superfluity of semen which causes the condition of lovesickness, they suggest other possible remedies when the love remains unrequited. Diversions such as pleasant companionship, soothing music and varied scenery all have their place in eradicating the lover's malady, but a more drastic treatment is sometimes suggested. Should the lover prove inconsolable, ugly, old women are enlisted to disparage the lady and to point out the disgusting secrets

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16. See my discussion of lovesickness and Damian's condition, Chapter 2.

of the female body. In his article on the lover's malady in "The Miller's Tale," Edward Schweitzer points out that Absolon, suffering like Arcite from "the loveris maladye / of Hereos" (KnT 44; I.1371-72), undergoes a traumatic cure for his obsession (223). Observing that the other remedies for this sometimes fatal condition attempt to distract the lover from his interest in the love object, Schweitzer claims that only a rude awakening to the inherent corruption of the flesh reveals the falseness of the image itelf (229). He quotes Bernard of Gordon's prescription for shocking the lover into abandoning his fantasy:

> Finaliter autem cum aliud consilium non habemus, imploremus auxilium et consilium vetularum, ut ipsam dehonestent, et diffament quantum possunt. . . . Quaeratur igitur vetula turpissima in aspectu cum magnis dentibus, et barba, et cum turpi et vili habitu, et quod portet subtus gremium pannum menstruatum, et adveniens Philocapta quod incipiat dehonestere [read "camillam"] suam, dicendo quomodo est tignosa et ebriosa et quod mingit in lecto, et quod est epileptica, et impudica, et quod in corpore suo sunt excrescentiae enormes cum foetore anhelitus, et aliis omnibus enormibus, in quibus vetulae sunt edoctae. Si autem ex his persuasionibus nolit dimittere, subito extrahat pannum menstruatum coram facie, portando, dicendo, clamando, talis est amica sua, talis. Et si his non dimiserit, iam non est homo, sed diabolus incarnatus. Fatuitas igitur sua, ulterius secum sit in perditione.
> [Finally, when we have no other recourse, we implore the aid and counsel of old women, to slander and defame the beloved as much as they can. . . . Therefore, seek out a most foul-looking old woman, with large teeth and a beard and with foul, vile clothing, and have her carry a menstrous rag in her bosom; and when she approaches the lover, have her begin to slander his beloved, explaining that she is bony and drunken, that she urinates in bed, that she is epileptic and shameless, and that there are huge stinking excrescences on her body, and all the

> other enormities about which old women are well instructed. If the lover will not relent on account of these persuasions, have her suddenly take out the menstrous rag before his face, holding it up and shouting, "Such is your love, such!" If he does not relent on account of these things, he is not a man but a devil incarnate. His folly will be with him finally in perdition.][17]

Absolon, however, has no need of such creatures; during the hairy kiss he comes face to face, as it were, with parts of the anatomy which appall him. He eschews not only the lovely Alison, but all thoughts of love, for his introduction to the real goal of the courting game fills him with disgust. In addition, he is confused about whose bottom he has actually kissed, and the spectre of homosexual activity intensifies his anger. "The Miller's Tale" presents cure by aversion in its most extreme form:

> His hoote love was coold and al yqueynt;
> For fro that tyme that he hadde kist hir ers,
> Of paramours he sette nat a kers,
> For he was heeled of his maladie.
> (MilT 75; I.3754-57)

Absolon's violent reaction to his misadventure indicates his horror : "Who rubbeth now, who froteth now his lippes / With dust, with sond, with straw, with clooth, with chippes . . ." (MilT 75; I.3747-48).

In an article which links the action at the end of "The Miller's Tale" to aspects of medieval medicine, David Williams speculates that Absolon's attempts at cleansing his

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17. Bernard of Gordon, Lilium medicinae quoted and tranlated in Schweitzer 228-9. Citing similar suggestions in the writings of Avicenna and Arnaldus Villanova, Schweitzer observes that Bernard's cure is "unique only in its narrative detail" (228).

mouth after his unfortunate kiss recall one of the two forms of cauterization used in the Middle Ages. According to Williams, the theme of cautery, realized fully in the application of the hot colter, begins with Absolon's frantic attempts to cleanse his mouth from the filth of the misdirected kiss:

> The cure by fire is prepared for when Absolon, revolted at his error, scrubs his lips with substances suggestive of a medical remedy. Although a somewhat homely version of the cure, Absolon's make-shift medicine evokes the use of caustics. . . . (232)

Williams refers in this passage to potential cautery which employs caustic substances to burn out diseased matter rather than actual cautery which uses fire.[18] Less easily controlled than heat, caustics do not enjoy the approbation accorded to their more radical counterpart. Albucasis cautions:

> Now you should know, my sons, that the actual cautery and its superiority over cauterization with chemical caustics is one of the secrets of medicine. For fire is a simple substance having no action except upon the actual part cauterized; nor does it do more than slightly harm any adjacent part. But the effect of cauterization with caustic may spread to parts at a distance from that burnt; and also in the part cauterized it may give rise to a disease difficult to cure or even fatal. (Albucasis 10)

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[18] The thirteenth-century surgeon Theodoric of Lucca defines the two kinds of treatment:

> Moreover the cautery is of two types, the actual cautery and the potential. The actual cautery is that which is performed by fire. But the potential is that which is performed by burning medication, such as cantharides, garlic, flamula, apium ranium, caustic ointment and the like. (Theodoric 132)

Similarly Guy de Chauliac explains the varieties of cautery, eventually agreeing with Albucasis that actual cautery cleans the wound more gently and more effectively than potential:

> The fire forsoþe (after þat alle the doctoures sayne) is double: þe actuel, þat appereth sodeynly, and is in dede . . . and [is] nought laide þerto vpon chaunce, but wetyngly. Anoþer is potencial, þat appereth noght sensuely (i. to the felynge) in an houre, but after the ledyng of the power þerof to the dede, þat is made with corosif medecynes and bustyng. (Guy 566)

In de Chauliac's opinion, the surgeon should always use the actual form "but ȝif it were the case in þe whiche þe pacient were not hardy to abyde þe fire for false herte" (Guy 566). Abrasive as they may be, Absolon's scrubbing materials in no way burn the offending matter, nor do they work slowly over a period of time as caustic remedies must. Although Williams quite rightly identifies the osculum in tergo as both chastisement and remedy, links with this surgical technique seem remote.

Parallels between medical procedures practised in the late Middle Ages and the action at the end of the tale do exist, however, and Chaucer prepares his audience for these allusions through changes in characterization. Unlike the analogues to "The Miller's Tale" which call for a smith to administer the hot iron, Chaucer's version casts a barber in the role of the duped lover. Competent in his vocation, Absolon is trained to perform the surgical duties expected of a barber: "Wel koude he laten blood, and clippe and shave" (MilT 70; I.3326). Because blood-letting always carries with it the risk of hemorrhage, the barber-surgeon necessarily possesses a knowledge of cautery, for one of its main functions is to staunch copious blood flow. Its other applications surely constitute no mystery for the young clerk. The medical practice of cautery gains further emphasis in the speech of Gerveys the smith who, as Williams points out, alludes to the usual materials for the surgical instruments employed in cauterization (233). Graciously acceding to Absolon's request for the glowing iron colter, Gerveys says, "Certes were it gold, / Or in a poke of nobles alle untold . . ." (MilT 76; I.3779-80).

Although the instruments of cauterization could be made of gold, and often were for the more delicate operations of the eye, for example, both Albucasis and Guy de Chauliac prefer iron because of its heating qualities. Reacting to Avicenna's edict that cauteries must be made of gold, Albucasis argues:

> The Ancients have stated that cauterization by gold is more effective than by iron. Now they said that on account of the temperateness of gold and its noble character. They also stated that the site of cauterization does not become purulent, but that is not absolutely so; for I myself have experience of that and have found that it happens in some cases and not in other cases. Cauterization by gold is indeed better and more successful than with iron, as they have stated; except that when you are heating the gold cautery in the fire you are uncertain, by reason of the redness of the gold, when it reaches the desired temperature. In addition to this it cools very quickly; and if you overheat it it melts in the fire, melts and runs, and the practitioner finds himself in difficulties. Therefore in our opinion cauterization is swifter and more successful with iron. (Albucasis 14)

The Cyrurgie repeats Albucasis's opinion:

> And þogh Avicen saie þat an actuel cauterize is beste made with golde, þat haþ trewþe in tendre membres, as ben þe eyȝen, as Arnalde saith, in oþer membres forsothe it is more sikerly made with iren, as Albucasis saiþ, for þat the firyhede may bettre be mesured with yren þan in golde ne yn siluer for here coloure, but ȝif it were done by a gold-smyth þat is wonte þerto. (Guy 566)

Williams interprets the branding of Nicholas as "a riotous comic rendition of the operation for 'fistula in ano'" as detailed by John of Arderne in his famous treatise (233). Although he correctly sees the connection between cauterization and Nicholas's punishment, the text does not substantiate specific relation to the hazardous and often fatal surgical technique popularized by John of Arderne but practised from classical antiquity. After Nicholas adds insult to injury by breaking wind in the rejected Absolon's face, the barber strikes back with his own injurious revenge:

> And he was redy with his iren hoot,
> And Nicholas ammyde the ers he smoot.
> Of gooth the skyn an hande-brede aboute,
> The hoote kultour brende so his toute,
> And for the smert he wende for to dye.
> (MilT 76; I.3809-13)

No suggestion of anal penetration occurs in this passage; indeed, had a hot iron been roughly introduced into the rectum, death would almost certainly ensue.[19] Moreover, cauteries become necessary in the operation for fistula only after surgical incision. The actual technique involved a division of the fistula by a sharp scalpel directed to the site by means of a slim, grooved funnel which protected the healthy tissue. Alternately, a thread could be drawn through the opening of the fisula in the anus to the exterior opening. The ends of this ligature were then tied together and tightened over a period of time so that the wall of the fistula was slowly severed. John of Arderne probably unnecessarily complicated the procedure by using both techniques simultaneously. Once the fistula was cut by whatever means, the diseased matter was excised by actual or potential cauteries. Never used externally, the cauteries were led to the infected site by a cooled funnel designed to act as guide and to prevent random burning (Siraisi 185). Before detailing the operation essentially as described by John of Arderne, Guy de Chauliac summarizes the treatment:

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[19] In "The Homoerotic Underside in Chaucer," Delores Frese argues that Absolon's thrust is most decidedly anal: "It is probably not irrelevant in undertaking a full appreciation of the homoerotic underside of the Miller's Tale to recall that Edward II, an English king whose dissolution was notorious and whose sexual predelections were almost surely homosexual, was murdered in 1327 in a fashion discomfitingly similar to the poetic execution of 'hende Nicholas'" (147). Frese sees a comic reversal of

> The cure forsoþe of a fistle þat perseth noght but goynge in the flesche is curede by kitynge and by brennynge of the pytte wiþ an actuel or with a potensial cauterie, when þat hole is made large wiþ a tente of genciane. . . . (Guy 331)

In contrast to the form of cauterization used in the operation for fistula in ano, cauterization to disperse humours involves searing the skin with a relatively large, round cautery. Forming a wound through which superfluities

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sexual roles in "The Miller's Tale," but her assertion of "fearful symmetry" (147) in this case is not substantiated by the text.

can escape, this method of cauterization finds particular application in attempts to readjust the body's humoral balance (Jones 97). Favouring cautery over surgery requiring a knife, Albucasis states:

> Now I say that the cautery has universal application for every ill constitution, whether organic or functional, with the exception of two: the functional hot temperament and the functional dry temperament. . . . Concerning the rest of the temperaments there is no reason for fear, particularly the cold and humid distempers; all medical men are agreed and none differs concerning the utility of cautery in such cases. (_Albucasis_ 8-9)

Following his Islamic sources, Theodoric comments:

> The cautery is a thing exceedingly helpful to the body, since it comforts the members and assists them so that corruption does not return in them, and dries out the corruptive fluids, and aids in restraining the thick and heavy flow of blood by making an eschar. It helps to open up the pathways and passages where an abnormal superfluity might not have dispersed rapidly; and thus, by the heat of its searing, it may attract and thin the fluids preparatory to their dispersal. (_Theodoric_ 132)

Guy de Chauliac agrees: "Cauteries, after Albucasis, accorden in alle disposicioun of humours, and namely of colde and moyste humours" (_Guy_ 566).[20] He specifies placement of the cautery for dysfunctions of the lower abdominal region:

> Cauteries ben made in þe haunches: in þe schare for þe bledder, behynde for þe reynes and for bowgednesses with a rounde cautery or with a casede clauale. . . . (_Guy_ 570)

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[20] Semen, before it is permeated by hot _spiritus_ in the testicles, is a cold, moist humour. The heat imparted by _spiritus_ renders it fertile.

Accepted medical treatment for discomforts in the area of the kidneys could therefore involve the application of a hot iron cautery to the fleshy part of the buttocks. Leading to eventual evacuation, the route taken by semen passes by the kidneys (the seat of sexual desire) to the buttocks. Because cauterization disperses superfluous humours, a hot iron placed on the buttocks should alleviate any distress caused by an overabundance of sperm. Logically applying the understood connection between the eyes and semen production, Theodoric prescribes cautery or dry cupping of the posterior to draw away putrid material collected because of a fistula in the tear duct (Theodoric 19). His theory depends on an acceptance of the proposition that the buttocks provide a reservoir for semen. By dispersing seminal fluid through the application of heat, the physician literally creates more space for additional matter to be drawn from the region of the eyes.

Undoubtedly, a knowledge of the theories common in late medieval medicine intensifies the joke of the final scene, but these theories link cautery to sexuality, not, as Williams contends, to a rather rare operation for a life-threatening condition. In plotting his revenge, the disappointed Absolon has no way of knowing that his rival has already spent an active night with Alison. The young barber cauterizes Nicholas's buttocks in a symbolic castration, for if the seminal route becomes even temporarily impaired, Nicholas will not possess the wherewithal to satisfy his mistress. Absolon renders impotent his virile counterpart, aligning Nicholas's sexual physiology with his own deficient state.

To augment the already complicated interlacing of medical theories operative in this scene, heat applied to the abdomen and buttocks readily disperses flatulence, according to Avicenna. Although he mentions scalding water or dry cupping, cauterization represents simply an intensification of the treatment (Gen. Prin. 528). That Nicholas enjoys an abundance of spiritus becomes apparent in his monumental fart. Absolon's posterior cautery therefore affects both seminal matter and flatulence, two of the absolute essentials for successful coition. Perfectly adapted to both his disposition and his profession, Absolon's retaliation manifestly puts Nicholas out of sexual commission. Medically, Absolon's harrowing encounter effectively disperses the humours responsible for his lovesickness, but the buttocks remain important to sexual mechanics, especially for the effeminate. As the source of the kiss which degrades him, the flatulence which offends him and the sexual ability which eludes him, Nicholas's posterior presents a perfect target for Absolon's purgative cautery.

Far from diminishing an appreciation of the humour inherent in the scatological emphasis of the final scene, the medical background of "The Miller's Tale" contributes to the joke. Exploiting the earnest writings of authorities linking flatulence and sexual ability, Chaucer creates a sexual athlete who humilitates his effeminate rival with a thunderous fart. He draws upon theories explaining effeminacy to deepen his description of Absolon, already indebted to literary paradigms of feminine beauty. Finally, he invokes the effects of cauterization in suggesting that by his revenge Absolon not only wounds his successful counterpart but also effectively rules out further sexual congress, at least temporarily. According to medical teachings, the Miller's greatest joke may be that the sexual abilities which differentiate Nicholas and Absolon at the beginning of the tale resolve into similarity at the end.

CONCLUSION

An understanding of medical principles current in England in the late Middle Ages contributes to our appreciation of medieval literature. The Reeve's metaphors for old age, May's false pregnancy, January's sexual inadequacies, and the relative virility of Nicholas and Absolon all become clearer in the light of medieval physiology. While the importance of such details to the final outcome of each tale does not depend upon the scientific rationale behind them, explanations of the medical theories involved add to their impact. Moreover, any contribution to modern understanding of medieval thought brings the contemporary reader one small step closer to experiencing Chaucer's stories as his original audience may have done.

Only four sections of the Canterbury Tales have been discussed in this dissertation, but the methodology has similar benefits for many of the tales. The Wife of Bath, for example, devotes a great deal of effort to advocating the employment of the generative members, but she never mentions children as a result of her amorous activities. In its overriding concern for fertility, medieval reproductive theory furnishes several reasons why excessive female sexuality leads to sterility. By her own admission, Alison is extremely active sexually. While the lack of progeny with her three aged husbands may be explained by their senile infertility, if not impotence, her younger husbands suffer from no similar constitutional disabilty. Alison's own physiology mitigates against conception, however, according to the medical precepts of the period. In addition, although the church hierarchy condemned practices which impeded or terminated conception, the medical writings contain suggestions for both fertility control and for abortificants. The reflections cast upon Alison's character by any of these explanations for her childlessness in no way enhance her character. An awareness of medieval teachings regarding infertility allows the modern reader to gain further insight into the medieval audience's response to the archwife.

The theories of effeminacy outlined in my discussion of "The Miller's Tale" also inform the characterization of the Pardoner. Even Chaucer the pilgrim admits some doubt concerning the sexual orientation of the Pardoner, but his homosexuality is by no means certain. Rather, he falls into the category of men who attempt heterosexual relations, but whose incompetence combined with effeminacy drives them to male lovers. Physically, Absolon and the Pardoner are very much alike; their very constitutions cause their sexual ambiguity.

Of course, Chaucer does not stand alone in his references to commonly-held medical theories. For example, aged figures in both drama and poetry can be better understood when the basic tenets of medieval geriatrics are realized. In addition, medical thought can occasionally furnish background to a puzzling detail in a medieval work. For instance, the second stanza of the well-known lyric, "Sumer is icumen in," rejoices over the vitality of springtime:

> Awe bleteþ after lomb,
> lhouþ after calue cu,
> Bulluc sterteþ, bucke verteþ,
> Murie sing cuccu! (Carleton Brown, 13. 6-9)

In his discussion of this verse, A.K. Moore notes:

> The older anthologists sometimes made ludicrous attempts to gloss "bucke verteþ" in a way tolerable to Victorian sensibilities. Most recent editors have recognized what every farm boy knows--that quadrupeds disport themselves in the spring precisely as the poet has said. (52)

Arguing for the realism of the stanza, Moore praises the homely language and the probability of the scene. But according to medieval medical understanding, the buck's fart indicates more than a true picture of frisking deer. Joined as it is with the fecundity invoked by the ewe's bleating for her lamb and the cow's calling her calf, the buck's excess *spiritus* signals the increased sexual vigor precipitated by spring. The stanza therefore celebrates nature's renewal in the present and promises a continuation of the cycle in the future. The medical background thus opens allusive levels which have remained undetected in modern analyses of the lyric.

In the third book of his *Didascalion*, Hugh of St. Victor identifies the seven subjects comprising the liberal arts, advising his students to become proficient in all areas of knowledge. As the foundation of learning, the arts include writing in its use of grammar and rhetoric, philosophy for its concern with the fundamental nature of things and medicine as one of the manual arts. Hugh explains the close relationship between the disciplines:

> Hæ quidem ita sibi cohærent, et alternis vicissim rationibus indigent, ut si una defuerit, cæteræ philosophum facere non possint. Unde mihi errare videntur, qui non attendentes talem in artibus cohærentiam, quasdam sibi ex ipsis eligunt, et cæteris, intactis, his se posse fieri perfectos putant.
> [These arts are so closely connected to one another, and each depends on the principles of the others that if one is lacking, the others alone cannot establish one as a philosopher. Therefore it seems to me that those who pay no attention to this coherence between the arts make a mistake. They are in error if they think that they can become perfectly knowledgeable in those which they have chosen by selecting for themselves only certain ones and ignoring the others.]
> (770; ch. V)

Heeding Hugo's admonition, this dissertation represents an attempt to bridge the gap between the disciplines of medicine and literature.

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